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Addresses.

SOME OF THE MINOR IMMORALITIES OF THE TOBACCO HABIT.[1]*

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PHILADELPHIA.

Man muss etwas Sein um etwas zu Machen.—GOETHE.

When first aroused by feelings akin to indignation by the announcement that this society was about to give a "smoker," it was not because I loved less the brethren chiefly instrumental in making the compromising spectacle possible, but because I loved my profession and alma mater more.

I had been taught, and still believe, that medicine is a sacred calling, that it combines in itself the excellencies of all professions, just as the greater contains the less; that the physician is, or ought to be, a man set apart, devoted to the betterment, not the destructive pleasures, or obliteration of the better interests of humanity, for the broad study of medicine, not to be confined within the narrow limits of therapeutics, considers man morally as well as physically and includes within its sphere the issues of life and death.

As law concerns itself with his constitutional and other rights, theology with his relation to God—or if you prefer it, good—and his fellow-man, so medicine has to do not only with these, but also with the health and indirectly the morals of the community, so inseparably associated with a sound body that often bad morals to the physician simply means bad health.

With the conception of the duties that belong to our vocation, this consuetudinarilly implied necessity on our part—transmitted perhaps from Hebrew and Greek priest—for physicians not only to avoid evil, but its appearance, this positive duty devolving upon us to separate ourselves from, and condemn everything causing, either moral or physical deterioration, you may imagine the sorrow that possessed many of the alumni of our common foster mother when they realized that, on the contrary, this association called by her name had gone over to the Philistines, that this division of her sons, of all men, after the manner of the profane world, had actually decided to give a "Smoker!" had deliberately and officially announced its purpose to throw the weight of its great example in favor of an indulgence condemned by almost every prudent father, by almost every mother and wife, by all who have been its victims, by nearly all who have not been, and by many who are still, under its thrall.

That a collective body of esteemed men should decide to stamp with the approval of a sanitary and presumably sagacious society—recognized custodians of the public health—a custom opposed to health and that has become the bane of domestic and public ethics as well as esthetics, a menace to higher education, a concomitant of nearly every modern error, an enemy of moral reform, a cause of mental decay, a habit, as many homes can testify, often causing the obliteration of that faculty that enables man to recognize the rights of others; that we as an association of physicians should have deliberately decided to feed with the bread of encouragement this procreator of hydra-headed disease, this habit which, according to the opinion of many educational and medical authorities, is the worst curse of modern civilization, 'is indeed one of those anomalies of conduct calculated to make the judicious grieve.

It is because of a belief in the not always recognized or admitted power of the habit for varied evil that we have been persuaded, mostly by conviction, but also by the compliment of your esteemed invitation to address you to-night on some of the minor immoralities connected with its use.

We are not discussing the rights of the individual, for, much as we regret friends somewhat dead in narcotic trespasses and soporific sins, we presume not to limit the liberty of any man; our protest is with an association, as if there was no other way of blowing the spark of good-fellowship into a flame, officially deciding to do what is not only inconsistent and unseemly, but morally wrong.

After the manner of the schoolmen—those curious old divines of the middle ages who occupied so many otherwise monotonous hours in discussing the niceties of abstract speculation—let us inquire for a moment what is morality and what is implied by vice, its reverse?

It is only necessary to consult a dictionary to learn that "morality implies the quality of an intention, a character, an action, a principle or a sentiment when tried by the standard of right;" "The practice of the moral and social duties, or the duties of men in their social relations;" that in theology, "morality has reference to man's duty toward himself, his fellow-men and God," and that "vice" is defined variously as "something that mars, a blemish, an unworthy or undesirable habit," and "as the habitual gratification of a debasing appetite."

We shall consider the tobacco vice first in relation to

*Read at the New England Supper given by the Philadelphia Society of the Alumni of the Medical Department of the University of Pennsylvania.

[1] This paper is the result of an invitation from the Board of Directors of the Philadelphia Alumni Society of the Medical Department of the University of Pennsylvania, in which Dr. Woods was asked to address the society on the subject of tobacco. The previous gatherings had been denominated "Smokers," to which title Dr. Woods naturally objected, feeling that not only the thing, but even the name, compromised the dignity of the profession. His acceptance of the invitation, as will be seen by his paper, was intended to bring before the association and to elicit discussion upon an indulgence which he, in common with others, considered derogatory to the intelligence of professional people as leaders of hygienic thought. The article has already brought forth good fruit among thinking medical men, and it is now published at the request of a number of friends for the benefit of the profession at large.—DE FORREST WILLARD.

his better nature and suppression of what is base.

In this connection you will allow me to draw your attention for a moment to the quality of Discontent, so important a factor in the moral, religious, social and physical development of the race, that we are almost justified in calling it divine, in saying as much in its favor, if we knew how, as the blood-stained poet-traitor Macbeth, said of sleep:

> ——Innocent sleep;
> Sleep that knits up the ravell'd sleave of care;
> The death of each day's life, sore labour's bath,
> Balm of hurt-minds, great nature's second course,
> Chief nourisher in life's feast.

Thus we may say, beneficent Discontent; the originator of reform; the mother of science, literature and art; the maker of beauty, the divine cause to which we are indebted for the amenities of social intercourse and all the buoyant exhilarations of modern life. Our country, national constitution, our consorting here tonight as clothed men around this cheerful board instead of barbarians around the burning bodies of our enemies, are all due to the influence of this thoughtlessly regretted possession. But for it, Luther would have remained a monk; freedom of speech, tolerance in religion, rights of private judgment, liberty of conscience would have been unknown, the Declaration of Independence unwritten. Without it we either retrograde or stand still; with it advancement is sure. The naked savage is content with his bed of leaves; an Alexander nobly discontent because there are no other worlds to conquer.

You will agree with me, therefore, that anything diminishing without adequate return, this progress-evoking quality, is morally wrong. If Columbus had been content with the map of Europe he would never have added to it. If our forefathers had been content with the injustice of an alien land they would never have declared themselves free. Asia was conquered by Athens, Athens by Rome, and the civilization of beyond the sea has been transmitted to us because of the discontent of the men who had gone before. If early man had been content with clay huts and worship in the exposed wilderness, we would not have known the glory of the Parthenon or the stately grace of the Cathedral of Milan. It was discontent that invented the spade, the harrow, the plow. It created the locomotive, replaced the galleon by the steamer, the postillion by the telephone. The studiousness of the scholar, the ardor of the poet, the sacrifice of the patriot, the fire of the hero, and the rapture of the saint, are all due to the presence of rest-preventing discontent; and yet so oblivious are we of its value as a means of conquest and development, that instead of having it instigate to the removal of obstacles, like our elders, to secure their opposite, we merely aim to destroy it with a drug; we put an enemy in our mouth to steal it away, and thousands of young men as a consequence, under the spell of its artificially induced calm, fail in the race of life as the great world with its struggles and aspirations moves on; West Point rejects them, Oberlin does, and many of the better colleges would like to refuse them; success does not attend them; arrested development is their portion, but what care they; like the Lotophagi in the Homeric legend, they have eaten of the enchanted fruit and are content to live in effortless idleness in Lotusland! This then is the testimony of educators—presidents of colleges, the higher schools and military academies—not only here but throughout the world, in reference to students who fail.[1]

It was a recognition of this that caused Fourier to exclaim in one of those prophetic, though terse sentences peculiar to him: "The nation that smokes perishes." This which seems such an exaggeration will bear inspection, for it needs no lighting of the casuistic candle to see that producing artificial tranquillity by a drug—whether it be opium, cocain, hashish, chloral or tobacco—in the place of growth-urging discontent, is an offence against our better nature, weakening that power of progressive achievment that ought to characterize nations and men.

Significant, too, is the fact that unlike other lethal products, tobacco almost alone has no medical properties entitling it to an honored place in the dispensatory. It is not used as a remedy for any disease; there are even no modifications of it employed in the treatment of the sick; it does not destroy germs or keep off contagion as certain conjecturally smoke-cured brethren seem to imagine. Chewing or smoking it does not diminish the danger when inhaling poisonous dust or vapor; it does not "prevent obesity," "aid digestion" or "relieve asthma," as its victims sometimes claim. On the contrary, it has been—not only because of its uselessness but also its danger—ignominiously expelled from the pharmacopeia of every civilized land, and yet, we *physicians*, knowing this and more, come together for the purpose of putting ourselves under its control, call our gatherings by its name, use it with as much tolerance as if it were a panacea for every ill, giving the sanction of our example *instar omnium* to its general use, thus casting our influence on the side of evil by publicly honoring this ubiquitous wrong. Is not this an immorality?

The demoralizing effect of this omnipotent evil enters every avenue of life. The laboring man and his family have no worse enemy than tobacco. "It often leads to drink," says Dr. Chalmers, "and drink leads to the devil." Returning from the work of the day with a pittance, about sufficient for bread, larder empty, children half clad, wife worn out with the overwhelming perplexities of the day, the home and its misery presenting a spectacle that appeals to his better nature, and for a time "wrapped in the worldly creed of prudence," he is under the influence of that discontent that would soon effect a betterment of his estate. He is a teetotaler, perhaps, with scruples against beer, but there on his mantel, void of ornament, lies a pipe black with the stains of long usage, and soon under the power of its discontent-dispelling influence, what cares he for the misery of his condition, the cough of his pallid

[1] They tell us variously that "the evils of tobacco exceed those of drink," that "tobacco is undermining the health and weakening the will of the present generation, and is as noxious as the giant evil, drunkenness;" that "there are students, even clergymen, whose usefulness has been as thoroughly ruined by tobacco as it could have been by drink;" that "it stupefies the moral sense;" that "student-smokers are deficient in scholarship"; that "more young men break down in body and mind and go astray as a result of smoking than of drinking"; that by "indulgence in the solacement of this seduction the power of achievement is weakened and men handicap themselves in the struggle where usually only the fittest survive"; that "tobacco soothes the excited nerves to render them ultimately more irritable"; that "it produces debility in self-restraint and weakens the power of the will"; that "it impairs physical vigor, perverts the taste, diminishes mental capacity, corrupts the moral sense and stimulates the animal nature"; that "it causes among students inferior scholarship and takes away the sense of shame in failure"; that if a census could be taken of all the young men who smoke, it would surprise and ought to distress our American people, for it has to do with social, moral and political degeneracy; that "the tobacco habit gains ground at the expense of emotional refinement and spiritual force." As witness Spain, Italy, Persia, Turkey, Syria, Mexico, Egypt and all the retrograde countries where even women are its prey.—(See 'The Tobacco Problem,' by Meta Lauda. Boston: Lee & Shepherd.)

wife, the helpless cry of half-fed children, the tawdry emptiness of his spare apartments, for with a garrulous newspaper in his hand and a pipe in his mouth, is he not translated into the listless paradise of self-complacent minds where care does not enter; and "the slavery holds him within this sepulchre of ambition," and will not let him go until the grave closes over him, a tobacco-saturated victim of self-indulgence, his orphaned children too often a care on the State?

Is not this an immorality? Would it not be better, more manly, instead of thus "sicklying o'er the native hue of resolution" with the pale cast of self-delusive content, to oppose and conquer the ills we have rather than resort to the reconciliation of a drug that moralists tell us "makes man selfish, unmannerly and sometimes worse," that permits him to carry unseemly odors into any company, a sick wife's or a sick child's, and show himself callous to the requests of others, and that would allow otherwise gentlemen "to fill the atmosphere of the continent with a perpetual stench," but for the self-defensive prohibitions found *necessary* to be placarded in places of public resort.

"The drunkard does not compel you to drink, the opium-eater to eat opium, but the smoker makes you smoke, nay more, visibly inhale the very vapor just ejected from his own mouth." Is not this a minor immorality to be regretted and concealed—since it seems it can not be abandoned—at least practice alone in the middle of a ten-acre lot, rather than as in these unseemly "smokers," *ater noctes*, unblushingly vaunted and exposed.

Again, Coleridge's axiom that "every educated man ought to know the best things," like Matthew Arnold's on the same subject, has almost become one of the pedantries of pedagogics.

If this applies to the ordinary gentleman, it does so with double force to the physician, who needs to be a man of varied endowments, requiring a wide extent of knowledge for the proper practice of his profession; associating with the most polished people of the community, he certainly ought to be acquainted with "the best things."

"We often can not do our entire duty," says Bagehot, "because of unpopularity," and what, we may ask, in a learned profession, causes unpopularity more than the frivolous ostentation of narrow endowments? Yet how can that man, however limited his horizon, with perhaps nothing quick about him but his temper, feel so dissatisfied with himself as to cause the realization of Coleridge's dictum, who carries in his pocket a drug that will produce inflation and content when he ought to be miserable and ashamed? He may not be living up even to the necessarily limited opportunities of his own profession. He may know nothing of "the best things," the great works, unconscious of the soul, the mighty have projected into their achievements; . . . the books of nature, inspiration and achievement equally closed to many, because with a self-complacent cigar in their mouths, a tawdry newspaper in their hands, they are content to be unacquainted with the best things, content to leave the mighty masters' mysteries, while they float the primrose way of dalliance on the vapor of a weed. Is not this an immorality?

Are there not men of good purpose in the profession, confined within the narrow limits of a mere specialty world, excluded from the essential delights of a more comprehensive life, who do not know a language but their vernacular, and, like the Mesquites of Homer, "know that wrong," who are utterly unacquainted with the best things in those universal tongues, painting and music, familiar with but little in the history of their own compassionate art, whose mere treadmill existence is so full of puerilities and self-noise that there is room for nothing else, who do not even perceive, as Professor Gross once said, that "the doctor who knows nothing but medicine does not know that?" Like Bottom, the weaver, satisfied with the "tongs and bones" when they might have celestial symphonies, the music of the spheres, the great "well of Truth" from which they draw their facts a mere barrel, and sometimes empty, and yet they are content! or if there is an occasional realization of deficiency, instead of permitting discontent to inspire repair, take a smoke or a bite from a mass of talismanic material they carry in their pockets—coerce the reward, omit the preliminary work—and presto! they are Sir Oracle, and when they ope' their mouths let no dog bark.

Is not this a minor immorality, especially on the part of the younger men, presumably self-reliant and strong, yet instead sometimes tobacco voluptuaries at 30, so regardless of the fitness of things, we have almost become familiar with the sight, as to ride through the streets with cigars in their mouths and enter the rooms of the sick reeking with the fetid fumes, stultifying professional propriety . . . ?

"It changes thought into reverie," says Victor Hugo. "It besots the nations," says that prince of observers, Balzac.

Again, is it not acquiescence in evil, to aid by concerted professional action, or alone, a *traffic* that makes morally obtuse the people who engage in it, and that constantly and persistently uses obscenity for the popularization of its wares, whose most powerful firms, as a matter of mere uncondemned routine, draw attention to their products by pictures intended to pollute and are only prevented by lack of ability from filling homes with indecency, the public imagination with suggestions of vice? Are we justified in adding thus to the power and ill-gotten wealth of the great tobacco houses, the vile people who mock morality, scorn modesty, who never hesitate to corrupt youth merely to effect a paltry sale, and are base enough to pictorially employ the fact of certain Cyprians taking to tobacco as a reason why it should be used by our sisters and wives?

Is it not an inconsistency for us *physicians*, teachers of sanitation, protectors of public health, interested *nolens volens* in the spiritual uplifting of our fellows, members of a responsible, yet joyous profession, though "as full of labor as a wise man's art," is it not an immorality for *us* to give the sanction of our conduct to the use of this obtunder of moral discrimination; that, to repeat again familiar facts, weakens the memory, vitiates the appetite, produces vertigo, enfeebles the action of the heart, depresses vitality, leads to intemperance, arrests development, causes insanity, amaurosis, deafness, laryngitis and cancer of the lip, and makes men content with conditions needing correction and reform?

These charges, suggestions for discussion, if you please, can not be laid at the door of the "giant evil," alcohol, for with all our knowledge of the wrongs of drink, we can not but admit that it is the excessive use, the abuse of the fluid "that makes glad the heart of man," that has caused so much injustice and distress, but with Raleigh's discovery, even its moderate

man's duty to himself, viz.—the development of use often produces the indifference and pseudo-content that makes possible many of the evils we regret. The old intellectual masters "who still rule our spirits from their urns," the great works in every department of exalted endeavor, the mighty things of the past—the pyramids, decalogue, the psalms, prophets, Homer, Athens, Laocoon, Venus de Milo, Apollo, Phidias, Scopas, the Coliseum, the Forum, Pantheon, La Nile, the Sibyls, Pieta, Sistine Madonna, the sublime creations that perennially inspire intellect and heart were done mostly by people who drank—we but state a fact—before the pipe prevented the ultimate development of the renaissance, but the frantically boasted progress of this tobacco age, when master and man, artist and artisan are equally its victims, has to do chiefly with the arts that produce mere physical comfort and ease, and but little with the great things that perennially appeal to the soul.

We do not mean to imply that genius is made impossible by tobacco, that it prevents all moral development, or that the prominent people of modern times have avoided its evils, for to their loss they have not, but we do claim that with our enormously increased facilities for the inculcation of sound principles and learning (in the past twenty years $200,000,000 having been given in private gifts alone for higher education), in these nicotin days when grave professors despairing over soporific lectures endeavor to gain even an ephemeral interest by seducing students to "Smokers" in their tobacco-poisoned rooms, converting as it would seem, every opportunity of college life into an excuse for the immolation of their independence to their grobian deity, in these *nicotin* days we repeat, with their facilities for the acquirement of sound principles and learning, it is a significant fact that we produce so few men of supreme intellect, that so many of our high public places are controlled by incapable people, and that our public buildings, even our venerable public buildings, often in their most admired places, too, as if like Sir Toby Belch there was "no respect of place, person nor time" in us, are so defiled as a consequence of the pernicious habit that we have become a byword among the nations.

Nor do we mean to assert that worth is obliterated by tobacco, that its use always implies minds resigned to the seductions of sense, that getting under its influence secures entrance into the pornerastic paradise of the sexual voluptuary, as the obscene advertisements of tobacco vendors aim to indicate; this may and evidently does apply to youth, and is one of the ways by which it leads to their moral ruin. The sexual precociousness and depravity of boys and young men addicted to tobacco is familiar to you, and the vile pictures by which tobacco dealers foist their wares on the public show that they at least recognize the kinship of the two vices, yet one of the perplexities encountered in opposing the tobacco habit is that so many otherwise good people remain its devotees—Pantagruel took Panurge for his favorite—acquiring the habit usually during the thoughtlessness of adolescence, notwithstanding resolves and regrets, it clings like a horrible Old Man of the Sea, to the end. It disfigures and degrades youth and makes senility, that needs so much to be attractively neat and clean, malodorous and repellent.

Do not either make the other mistake of quoting in support of the harmlessness of tobacco certain distinguished persons addicted to its use, living long and doing well, although surely not as well as if unbaned. There is a temptation to this sort of reasoning, especially on the part of people desiring justification for faults they either can not or will not overcome. Coleridge's and De Quincey's bondage to opium, Hirst's and Verlaine's to absinthe, Rossetti's and Naphey's to chloral, Burns' and Poe's to alcohol, notwithstanding the productive power of the men, do not imply that their habits were harmless and justify their adoption by others. As well might we urge that epilepsy was "harmless" because Cæsar and Charlemagne, Mohammed, Napoleon and Flaubert were epileptics, or that scrofula "augments the power of judgment" because Æsop, Johnson and Pope were scrofulous, or that consumption "quickens the imagination" because Keats, Clough, David Gray, Lanier and Stevenson were consumptives, or that neurasthenia "draws wisdom from the lips of philosophers and shuts up the mouths of fools," because Spinoza, Kant and Herbert Spencer were never well, or that insanity was an advantage because Antone Wiertz, William Cowper, Nathanael Lee and William Blake were insane, or that sacerdotal mutilation was a benefit because Narses and Origen were thus mutilated. There are minds that nothing can keep from rising above the shallows, but this in spite, not in praise of, restraining influences, but this is no excuse for their adoption or sanction by us, who because of the responsibility of our calling ought to stem the tide engendered by the will-engulfing weed rather than drift indolently upon its bosom, for we may be assured, to use the words of the Autocrat of the Breakfast Table, that "the stain of the reverie-breeding narcotic strikes deeper than we think."

The vulgarity and licentiousness of the press, with its mercenary pandering to vice, corrupting as it does that very fountain of national strength, the home; the lubricity, the demoralizing baseness of the degraded drama, disfigurement of hoardings by the cigarette-soaked indecencies of the variety stage, making it difficult for our children to walk the streets without contamination, the growing fondness for certain social functions with their flimsy vaudeville adornments, the mockery of and attempted obliteration of personal puritanism, the crass things done by tobacco-biased young people, degradation of seats of learning by the introduction of smoking-rooms, those hotbeds of vice and agnosticism, of ballet dancing and brainless burlesque—imbecility and irreverence under the auspices of fashion—defilement of public buildings by foul receptacles provided for a people so base that it is necessary to ask them to please not spit on the floor, the negro minstrel methods of some of our churches, the effeminacy of religious periodicals with their venal advocacy of successful quackery and fraud, the prevalence of the gambling mania among women, leveling all ranks, wasting energy, dissipating time so much needed in more ennobling ways, mediæval grotesqueries, euchre and wine parties for the spiritual and physical benefit of the outcast and sick, made so by gambling and drink! what, unless completely engrossed in other things, could induce thoughtful men to silently submit to these, but that undiscriminating drowsiness of conscience—"denying nothing, doubting everything," so frequently induced by tobacco?

Thus our limit is attained without our having suggested but a few of the more elusive immoralities of

this least decorous of "the pleasant vices of which the just gods make instruments to scourge us." Others, likely more convincing, will occur to each, as it is the physician's function to detect the beginning of evil. Because of such neglect—it is too late when ignorantly acquired indulgences become fixed habits—there are but few families without at least one member maimed in some of his faculties, neglecting some of his duties, violating some canon of social or domestic ethics because of the seductions of this alluring tempter, so that content, evidently designed by nature as a reward for successful labor, is coerced without labor by the hypnotism of a drug that makes men "lovers of pleasure more than lovers of good."

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SURGICAL TREATMENT OF PERFORATING AND BLEEDING WOUNDS OF THE CHEST.*

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NEW ORLEANS, LA.

The dangerous hemorrhages of the chest that more frequently give the surgeon an opportunity for the application of direct hemostasis are those resulting from parietal, pulmonary and diaphragmatic wounds. Hemorrhages from the aorta and its large intrathoracic branches, the heart, the pulmonary arteries and veins before they penetrate the hilum, the venæ cavæ and venæ azygos are promptly fatal, especially if due to gunshot wounds. These are the chief causes of the great and unavoidable mortality from chest wound on the battle-field. From the surgical or operative point of view they need not be considered, as the patients die, as a rule, before they can be reached; though to this rule the records show some remarkable exceptions.[1]

It is more than probable, as shown by recent reports, that more frequent and successful attempts will be made in the future to relieve the stab and punctured wounds of the heart that survive the immediate effects of the injury; but this class of cases will ever be rare, in spite of the brilliant examples of Farina, Capellan, Rhen, Parozanni and Parlavecchio. As to the gunshot perforations of the heart, they will continue, for obvious reasons, to spare the surgeon even the contemplation of his helplessness to relieve them.

In spite of the antiquity of the recommendation, I would insist upon the importance of carefully examining all wounds of the chest, presenting serious symptoms, for injury to the internal mammary or intercostal vessels.

The fact that bleeding from these vessels is frequently overlooked because it is so often concealed and internal has been clearly impressed upon my mind by two cases of stab wounds of the internal mammary artery and one of the intercostals that have come under my observation. All these cases occurred in the Charity Hospital—the two mammary injuries ending fatally. In one of these, at least, a careful and thorough examination would have probably averted the fatal end.

*Extracted from an address on Surgery of the Chest, read before the Louisiana State Medical Society.

[1] Otis and Delorme, among the military surgeons, have collected a number of wonderful cases of survival after injury of the large arterial and venous trunks in addition to the more numerous recoveries after heart injuries. A rough idea of the proportion of the fatalities from hemorrhages due to injuries to the great vessels as compared with the lung injuries is obtained in a statement made by Liddell. At New Berne he examined thirty-two dead from chest wounds, and of these, at least eight had wounds which must have involved the heart and great vessels.—Otis' Surgical History of the War of the Rebellion. Vol. ii.

Case 1.[2]—A. B., male, negro, aged 25 years; was brought in the ambulance suffering from the effects of a stab wound of the chest, implicating some large vessel. Much external hemorrhage had taken place at the time of injury, but this was stopped without much difficulty. When brought to the hospital, the patient was very pale and suffering from profound shock; breathing short, rapid; pulse intermittent, very rapid and almost imperceptible; consciousness retained; complained of a feeling of great oppression in the chest. Messrs. A. and M., the ambulance surgeons, immediately injected an extemporized saline solution in the median cephalic. The pulse improved at first as the fluid flowed into the veins, and almost the normal rhythm and number of beats had been reached when the injection was stopped. About two pints were injected. Though the pulse was very notably improved, the respiration still continued quite rapid and panting. The general effect on the patient was most remarkable. He appeared greatly relieved of his previous anxiety and distress and so expressed himself. The effects of the injection were temporary, however, and the patient succumbed about four and one half hours after admission. The post-mortem examination revealed an enormous hemothorax, caused by a completely divided internal mammary artery (third interspace). The pericardium had also been perforated, but the heart was intact. In this case vascular depletion, anemia and apnea, from complete compression of the left lung, were the causes of death. Still, in spite of these eminently lethal conditions, life was prolonged several hours by the saline infusion. It is reasonable to conclude that this patient would have had a better chance for recovery had the original wound been enlarged and the bleeding vessel secured *in situ* while the patient was being stimulated with the hot saline solution. The belief that a large pulmonary vessel of the heart had been injured discouraged any attempt in this direction.

The next case is one in which the injury was precisely similar, and yet, in which, notwithstanding the ligation of the divided mammary and exploration of the heart and chest while the infusion was being applied, the patient died in less than twelve hours after the intervention, from the combined effects of traumatic anemia and apnea.

Case 2.[3]—F., white, male, aged 25 years, laborer, at 2 A.M., April 6, 1897, was stabbed by a companion in a drunken brawl. The wound was inflicted with a pointed clasp knife, which entered one-third of an inch to the left of the second sternocostal junction, on the left side. The wound was a little over one-half an inch in breadth, and was directed obliquely downward and to the left. The cartilage of the second rib was almost completely divided and part of the interspace below was involved. When seen by the ambulance surgeons, the patient was completely collapsed, and it was believed that he would scarcely survive the transfer to the hospital. He had bled profusely from the external wound, but this had finally stopped spontaneously by the formation of a clot. While in the ambulance the clot became detached and the bleeding was renewed. Upon arrival at the hospital the assistant house surgeon on duty made a careful examination and decided that the internal mammary artery had been injured. The pulse was so weak that the patient was at once infused, and received three-quarters of a gallon of hot saline solution, intravenously, with decided restorative effect. The man's condition was so serious, however, that it was decided to disturb him as little as possible. Instead of a regular dissection and ligation of the injured vessel a deep wire suture was passed through the thickness of the chest wall, encircling (as was believed) the wounded vessel in the interspace, the ends of the wire being firmly twisted over an iodoform gauze roll, which with two other stitches completely closed the comparatively small wound.

The bleeding appeared to be controlled by this means, and the patient was put to bed, where he was warmed up with hot cans, etc. The great shock and signs of internal hemorrhage aroused the suspicion that in addition to the internal mammary, the heart or lung had been injured. The length of the blade, the great violence of the blow, which had nearly cut the cartilage in two, and its position in the precordia, confirmed this im-

[2] Abstracted from the author's paper entitled "A Clinical Report on Intravenous Saline Infusion in the Wards of the Charity Hospital from 1888–1891." Louisiana State Medical Society's Transactions, p. 1891, and New Orleans Medical and Surgical Journal, July, 1891, p. 16.

[3] I am largely indebted for the notes of this case to Dr. A. R. Hagen of New Orleans, who embodied it in his excellent graduation thesis (unpublished): "Reports of Five Gunshot and Stab Wounds in and about the Pericardium." Medical Department Tulane University: class 1896–97. Dr. Hagen was in attendance as interne in my service, Charity Hospital, ward 9, when the patient was admitted.

pression. Under the usual treatment—rest, morphia hypodermically, strychnia, etc.—the patient gradually improved during the night; the pulse grew strong and the respirations moderated in frequency. Early in the morning (April 7) notwithstanding his extreme pallor, hope was entertained of his recovery. Later in the morning, after 9 A.M., and after taking liquid nourishment, a change occurred, the patient complained of distress about the heart, the face grew more anxious, the respirations became more violent and the pulse weaker. I saw the man about 11 A.M., and was at once struck with the gravity of his condition. He was gasping for breath, his face was livid, almost cadaveric in hue; cold sweat bathed his skin, and his pulse, 150-160, was almost imperceptible at the wrist. I renewed the dressings and noticed a marked fulness in the precordia and intercostal spaces on the left side, and great tension in the wound as if it were about to tear open. There was complete dulness on percussion over the entire left thorax. Evidently the man was dying from hemorrhage into the pericardium and pleura. In spite of his desperate and unpromising condition I decided to make an effort to reach the bleeding point. I was ably assisted by the late Dr. J. Leake, who took charge of the intravenous saline infusion, which I decided to repeat once more before attempting any operative treatment. A canula was introduced into the right median cephalic and after a pint of the deci-normal saline solution had flown in, the pulse began to improve. The line of incision was mapped out with an infiltration of 1 per cent. cocain solution, and a cone containing a little ether was held over the patient's nose, but no attempt was made to secure general narcosis. The wound sutures were then cut and a gush of dark blood and clots followed as the wound burst open, showing that the blood had accumulated under great pressure in the mediastinum or pericardium. As the original wound was sufficient to expose the mammary artery, and believing that this great hemorrhage came from the pericardium or the heart itself, I freely enlarged the opening by an incision on a level with the second cartilage, horizontally, and for over four inches to the left; a vertical incision, at each end of the horizontal cut completing a figure H, which permitted two osteoplastic flaps to be reflected upward and downward. The second and third cartilages with part of the corresponding ribs were rapidly cut with a costotome and the two osteoplastic flaps, consisting of cartilage, skin and soft parts, were easily separated, and the mediastinum freely opened to the fourth rib. The internal mammary was then seen completely divided in the second interspace, close to the cartilage, where it was still spurting, and evidently the chief cause of the hemorrhage. It was also evident that the perivascular silver ligature, which had been applied on admission, had entirely missed the vessel, and failed to accomplish its purpose. This again shows the necessity in all similar cases not to trust to ligatures en masse, but to follow the golden rule, and to cut directly to the bleeding vessel, and secure it at the bleeding point. The vessel was seized with forceps and ligated on the proximal side. By the double trap-door opening that had been made in the precordia, the mediastinum and pericardium and pleura had been freely exposed. The chest appeared to be filled with blood, every inspiration causing it to well up almost to the surface of the skin. After removing the clots and blood by sponging and irrigation with neutral saline solution, I failed to discover any bleeding point. The heart was plainly exposed before us, and its tumultuous, irregular and churning movements as they lashed the serum and blood into a foam made a deep impression on all present. The constant motion of the air as it rushed in and out of the large fenestrum in the chest, combined with the violent efforts made by the patient to breathe, added to the tragic character of the occasion. The impression produced on all present was that the pericardium had been freely opened and that the blood we saw was contained in its cavity. The post-mortem examination subsequently proved, however, that the pericardium had been wounded to the extent of one inch only, and that the bleeding had been mainly extrapericardial, mediastinal and intrapleural. The pericardial cavity was really free from blood, and the membrane had adjusted itself so accurately to the surface of the heart that the organ was seen through it as if wrapped in a transparent veil. We all examined carefully and failed to see any wound of the heart itself. In fact, no other bleeding point could be detected outside of the original mammary injury which we had controlled. All the bad symptoms were therefore due to hemothorax, collapse of the lung and shock. The lung was so completely collapsed that I could scarcely see it behind the heart. The condition of the patient in the meantime was most alarming and distressing to behold. The pulse had been reduced from 160-170 to 120 by the saline infusion, of which nearly three pints had been injected, intermittingly, and the volume was a great deal better, s very bad. The lips were livid, bluish black, and the whole picture was that of intense respiratory distress. After freely irrigating, flushing and filling the pleura and pericardium by pouring pitchers of hot saline solution, a procedure which I thought might, on account of the heat, have some restorative effect, as it sometimes has in the peritoneum—but which in this instance failed totally to produce any marked effect—I hastened to close the wound and put on an occlusive aseptic dressing.

I believe now that if I had only been able to inflate the collapsed lung and had sutured it to the chest wound, the man's condition would have improved, and he, perhaps have been saved. But we knew nothing of the Fell-O'Dwyer apparatus at that time. The entire closure of the wound was quickly terminated, and in fact the whole exploratory procedure, including the ligature of the mammary artery, involved a comparatively short time—not over 25 minutes. The pain involved in making the osteoplastic flaps appeared to be greatly obtunded by the partial asphyxia that existed; at least the patient made little, if any, complaint, though he was perfectly conscious throughout. The skin flaps were sutured with interrupted stitches, but two drainage-tubes were left at the lower angles to favor the escape of bloody serum; after this a heavy gauze and cotton dressing, over which was applied a large flat plate to compress the wounded area more thoroughly and seal it hermetically. Adhesive strips and bandage further secured the entire dressing and chest. The patient was then stimulated freely with strychnia, digitalis, whisky and aromatic spirits of ammonia in the endeavor to relieve the dyspnea and great exhaustion. The pulse was never reduced lower than 115 at its best moment. It continued fair as to fulness and frequency shortly after the infusion was discontinued, but it was extremely irregular. The cyanosis became more and more marked after the operation; respirations more shallow and hurried. A cold, clammy perspiration bathed the surface. By night time it failed and the patient sank, apparently from complete exhaustion due to shock, hemorrhage and asphyxia. The autopsy, held the same night, revealed a large amount of bloody fluid (serum and saline solution) in the pleural cavity. The pericardium showed a wound not much over half an inch in length. The left ventricular wall was punctured about one and one-half inches above the apex, and about one and one-half inches to the left of the anterior interventricular groove. The puncture was very small, barely one-fourth inch deep, and did not penetrate into any of the heart cavities. The pericardium contained ⅜ ounces of serosanguinolent fluid, but no clots. Clearly, the primary cause of death was the wound in the mammary artery.

The intercostals have also furnished me with at least one instructive experience:

Case 3.—A negro, aged 40 years, was struck a sharp blow with an axe, the upper edge and point of which entered the chest on a level with the ninth rib, about a hand's breadth from the lower angle of the scapula and to the outer side of it. The rib was cut in two, and the pleura punctured. The man became very weak and faint and bled very freely from the wound, which was about three inches long. A local physician washed the wound carefully, closed it with deep sutures and put on a firm antiseptic dressing. The man grew worse, however, and was sent to the hospital during the night. The next morning I saw him, and, finding him very pale, with very rapid and scarcely perceptible pulse, and in great distress with his breathing, I concluded that serious hemorrhage was going on in the pleura. The dressings were removed and the great tension of the wound and intercostal spaces confirmed my impression. The patient was at once prepared for operation and stimulated with brandy, digitalis and strychnin. No anesthetic was given. The sutures were cut, the wound was reopened, and a free escape of blood followed. The axe had cut the rib completely and with it the intercostal artery and vein at a distance of about eight inches from its origin. The vessel could not be seen or secured with the ligature until nearly two inches of rib had been removed with the costotome. In order to do this a syringeful of cocain solution, 1 per cent., was injected in the neighborhood of the nerve on the proximal side. Whether it was due to this or to the man's own fortitude, he made little complaint. After securing the vessel the pleural opening was enlarged and a considerable quantity of fluid blood and clots (nearly two quarts in all) escaped from the pleura. The pleura was immediately closed to prevent pneumothorax. The patient became very faint by this time; his pulse nearly imperceptible. We hurriedly sutured the wound and applied a firm dressing. In the meantime, the ordinary stimulants were applied freely, while he was warmed with hot cans; the head was kept very low. After a long suspense the patient rallied. He did well for the next four or five days, when signs of pleural infection showed themselves, which necessitated the introduction of a drain in

the pleura. The patient was so exhausted that for a long time we did not believe he would live; finally, however, he recovered.

Cases of this sort readily explain the bad results that have been so frequently recorded as following injuries of intercostal arteries. "In the Civil War, out of a total of 15 cases variously treated, 11 ended in death. In 8 an operation was performed; of these, 6 died—1 from pyemia, 1 from empyema, 1 from exhaustion and 3 from secondary hemorrhage. The operations had scarcely been more successful than the cases treated by compression. But because this was the case are we justified in believing that it is not necessary to operate in these cases, or to do more than plug the wound?" (Paget.) These experiences simply show the need for more thorough and prompt investigation of all deep wounds which are situated in the anatomic course of these vessels, especially where they are of larger caliber, as in the posterior half of the thorax, nearer their origin. In conditions of great exhaustion, and where there is doubt that bleeding is actually going on, it may be sufficient to plug the wound with a Desault's bag or tampon which can be aptly compared to a small Mikulicz bag, thoroughly packed so as to compress the wounded vessel. But, when the situation does not improve and there is evidence that bleeding is going on, the quickest and surest treatment is to enlarge the wound (in extreme exhaustion, with cocain anesthesia as a help) and expose the intercostal or internal mammary. With the help of the rongeur or a sharp costotome this work can be done quickly. The subperiostal resection of a rib is so certain to expose the bleeding vessel, and is so easily accomplished, that there is no excuse for delay in critic conditions when the patient's life hangs in the balance.

But if the intercostal or internal mammary arteries are not at fault, must we stop after ascertaining positively that the hemorrhage is internal? This brings us to the question: Whence does the hemorrhage come if it is not from the parietes? We have already noticed that bleeding from a wounded heart, aorta or the great arterial and venous trunks of the mediastinum will kill so quickly through the fierce bleeding that follows that we rarely see these patients outside of the moribund condition.

The bleeding wounds of the lung which give rise to progressive hemothorax are those that offer some hope for the direct ministrations of surgery, notwithstanding the gloomy prognostications of many eminent surgeons. The source of the bleeding in the lung is a question that did not appear to interest the older surgeons even down to the time of Larrey. All that they cared to know was whether the hemorrhage was parietal or visceral. If it was decided that the bleeding was visceral, that was the end of the inquiry. Nature and the materia medica alone could come to the rescue, except when, occasionally, the surgeons would enlarge the wound to allow the pent-up blood to escape. Dupuytren, in his clinics, was among the first to discuss the source of the blood in hemothorax. He believed that an abundant hemorrhage into the pleura could only occur as the result of injury to the large vessels at the root of the lung. In 1853, Jobert de Lamballe ascertained by actual cadaveric examination that superficial wounds of the lung only give rise to insignificant hemorrhage, and that the parenchyma bleeds but little when wounded. Dupuytren's teaching was generally accepted until about 1880, when Charles Nélaton's experimental, clinical and anatomic researches came to light and proved three things: 1. That wounds of the large vessels (arteries and veins) at the root of the lung, before they subdivide in the substance of the organ, are invariably fatal in from nine to ten minutes. In the animals experimented upon, a wound of these vessels caused the blood to spurt in a large stream, which quickly filled the pleura and compressed the lung. The animals expired in the midst of intense dyspnea and anxiety. It is possible that the coincidence of acute pneumothorax had something to do with these bad results, but the profuse hemorrhage observed by Nélaton is quite sufficient to convince us that wounds of this class are almost as promptly fatal as those of the aorta or vena cava. What are the wounds, then, that give rise to the hemorrhages which, though very serious, will allow of sufficient survival to permit of surgical interference? According to Nélaton's investigations they are the arterial branches of the second and third magnitude which accompany the larger divisions of the bronchial tubes. These vessels are not only of large size, but have a tendency to bleed freely, even when the lung is collapsed or compressed by the extravasated blood. The cartilaginous resistance of the larger bronchi to compression and the close connection of these vessels with the open tubes prevents the retraction of the arteries even after complete collapse of the lung has taken place. Therefore, the most dangerous zone of hemorrhage is a comparatively circumscribed area in the neighborhood of the hilum; the zone rapidly diminishes in importance as the bronchi become smaller and lose their cartilaginous resistance. The fact that this hemorrhagic area is comparatively small as compared with the mass of the lung accounts for the frequency of recoveries after complete perforating wounds of the chest, and also for the comparative rarity of that middle class in which the primary hemorrhage is not so furious as to cause immediate death and yet bad enough to resist nature's hemostatic resources and thus bring about a fatal termination at a later moment. The surgeon can not be expected to determine the primary seat of the hemorrhage. He can usually diagnosticate a lesion of the lung and judge of the importance of the vessel injured by the rapidity and extent of the hemothorax and also by the symptoms. He can not localize the lesion with precision, but he can tell if the patient is bleeding to death. In this last class of cases we are now interested, as it would be superfluous to consider those in which the symptoms are of moderate intensity, and in which the usual classic and expectant rules of treatment yield perfectly satisfactory results.

What, then, is the best course to follow when we clearly determine that the bleeding is profuse and does not come from the chest wall? Shall we pursue a conservative policy to the last, trusting that something favorable will turn up, or shall we resolutely proceed to investigate and treat the bleeding point by free exposure of the wounded lung or other bleeding surface? This question has been frequently asked in medical assemblies, and has been answered at various times in different ways, in accordance with the resources of the period. In fact, the history of the perforating injuries of the chest, like those of the abdomen and cranium, is a faithful reflex or mirror of the history and progress of surgery in general. At the present moment this question has not yet been decisively or, at least, unanimously answered by those most competent to express an opinion. Unfortunately

precedents and statistics are insufficient to decide on the question of intervention or non-intervention, of expectation or aggression, in this matter, and the course of the practitioner must largely depend upon his individual judgment, skill and experience.

That a tendency to aggressive action is developing rapidly in the most advanced centers of surgical teaching is unquestionable, especially since the great discussion started by Réclus, at the French Surgical Congress in 1895, aroused new interest in this direction. Nevertheless, the attitude of most teachers of surgery here as in England, is decidedly conservative in tone, a conservatism which, in purely educational texts, is evidently proper at a time when the tribunal of authority is still waiting for more evidence before rendering its final judgment. Thus we find the authors of the "American Text-Book of Surgery" (edition 1897) expressing themselves as follows: "The day may come when the thorax will be opened for access to the wounded lung, pericardium, and heart; and the experimental results of Bloch and others on the lower animals would warrant this belief, but the time has not yet arrived when the general recommendation of this course is justifiable." All the older texts are still more formal in the injunction not to interfere. They tell us, if the hemorrhage comes from the lung, to simply close the external wound, place the patient on the injured side and apply ice-bags to the chest. Give morphia or ergotin, hypodermically; turpentin, aromatic sulphuric acid, gallic acid, etc. If the bleeding continues and it is evident that great distension of the pleura exists, we are advised—and in fact, there has been no other alternative hitherto—to reopen the wound, and if necessary enlarge it for the removal of the clots. Ice-cold water injected into the pleural cavity has been recommended by Délorme: but if the bleeding continues, the wound must be again closed, cold applied externally and the patient laid upon the wounded side, "thus persevering," as Otis remarks, "opening and closing the wounded side, hoping to gain time and stave off the most pressing danger." (Stevenson, Wounds in War, 1898, p. 309.) This uncertain state of opinion is a repetition of the history of perforating wounds of the abdomen when in bleeding cases "to operate or not to operate" was the anxious question. In the abdomen that question has been definitely decided, and "*to operate*" is now the command whenever there is just enough life in the patient to sustain the traumatism required to arrest the hemorrhage.

In contrast with the policy of expectation, which trusts solely to nature's efforts, we hear the voice of many men of recognized judgment and discretion who believe that Gluck's dictum: *Ubi hemorrhagia, ibi ligatura*, as applied to chest wounds, is as sound in precept as in dealing with hemorrhage in more accessible parts of the body, provided it is carefully tempered with a due amount of discretion. The matter was clearly presented by Réclus, in 1895, when, quoting the unfortunate but remarkable cases of Omboni and Delorme, he asks; "Shall we be discouraged that they failed? I think not. I believe that in a case of hemorrhage persisting in spite of rest, immobilization of the chest wall and occlusion of the wound, if the loss of blood is endangering the patient's life, is filling the pleura and threatening to stop the action of the heart, or of the lung, then a free opening into the chest will enable the surgeon to stop the bleeding by tying the vessel, or the piece of lung which is wounded, or by packing the wound with iodoform gauze. If we wait, the patient may bleed past hope of help; on the other hand, we must not forget that it is a very serious business to interfere in these cases, to inflict the shock of operation on a patient already enfeebled, and to induce pneumothorax of the whole side of the chest, over and above the disadvantages which are already hindering the vital changes in the blood."

Michaux, who reported a successful case of gunshot wound of the lung in which the bleeding was arrested by direct pressure with a gauze pack, quotes Charles Nélaton's thesis of 1880 (on hemothorax) in support of operative interference. Nélaton's statistics show that the mortality of the great hemorrhagic effusions caused by wounds of the lung embrace at least 50 per cent. of the cases when treated by expectation and ordinary methods of treatment. This fact alone, Michaux believes, justifies the intervention of surgery, though he recognizes that many of these deaths were due to secondary septic causes. The surgical indications should not be based upon a single symptom. Michaux mentions the following conditions among the positive indications for operation: 1. Indubitable symptoms of a recent extravasation, extensive flatness on percussion, absence of vocal fremitus, etc. 2. More or less dangerous topography of the wound (neighborhood of the heart, of the intercostal and mammary arteries). 3. Exhaustion, anguish, dyspnea, if progressively increasing. As long as the danger is not pressing and there is doubt as to whether the hemorrhage is increasing, it is much better to wait a few hours if necessary in order to observe the conditions carefully and not act unnecessarily. The great indication for action is positive evidence of serious and progressive hemorrhage.

Under these circumstances the secret of success lies in the judgment of the practitioner who knows *when* to act and not wait until the opportunity has passed. Once the conviction comes that the patient is bleeding to death, prompt and decisive action is called for without losing time in abstract possibilities of spontaneous recovery. Réclus, Délorme, Michaux, Berger, Terrior, Souligoux, and finally Stephen Paget, whose well-balanced judgment and profound knowledge of the problems involved no one will question, agree with many others that this is the proper course to pursue.

But it is plain that we should never undertake the exposure of the injured or bleeding lung without thoroughly weighing the patient's capacity of resistance to shock or further traumatism, and without due preparation for the serious contingencies that will certainly arise in the course of the operation. The conditions that are to be most feared under these circumstances are, fatal shock and uncontrollable hemorrhage, cardiac and respiratory failure; and it is fortunate that in dealing with these perils the contemporary surgeon is armed with better resources than were ever accorded to his predecessors. So recent, in fact, are these acquisitions that I scarcely believe it is justifiable to even estimate the possibilities of thoracic surgery in dealing with visceral, and especially pulmonary, traumatisms until the restorative influence of intravenous hot saline infusion, given as a prophylactic against shock and as a preparatory measure in preventing it, as well as in relieving the exhaustion and vascular depletion—not as it is usually resorted to, *after* the shock of additional traumatism has finished with the little vitality that is left in this class

of patients—has been thoroughly tried. In addition, the possibilities of artificial respiration with the Fell-O'Dwyer apparatus (a bellows with a tube inserted in the larynx) to prevent asphyxia from pneumothorax should never be forgotten in estimating the future prospects of this class of patients.

In preparing to operate upon patients in such critic conditions as those herein contemplated, the proper procedure is to begin by exposing a vein in the arm or leg and introducing a canula through which the saline solution can be infused steadily before the anesthesia is begun. In the majority of these cases the condition of the pulse is so bad and the cyanosis so great that neither chloroform, ether, nor the Schleich mixtures are well borne. The fear of these anesthetics led me on one occasion to use cocain in very weak strength, .2 and .1 per cent. (Schleich formula), with sufficient effect to permit me to make an osteoplastic flap including four and one-half inches of a rib, with comparatively little pain, the intercostal nerve having been thoroughly anesthetized on the proximal side with cocain before the rib section was made. At other times in which the administratisn of a general anesthetic was absolutely required, the general condition improved so much after the saline infusion had begun that I was able to administer chloroform in minute but sufficient quantities to produce the necessary anesthesia. On the other hand, if, under the influence of the infusion, the pulse fails to improve, it is perfectly useless to continue and all hope of operative relief must be abandoned, unless the cardiac failure is attributable to respiratory embarrassment from collapse of the lung, when inflation of the lung and artificial respiration with the Fell-O'Dwyer apparatus should be tried in conjunction with the saline infusion.[4]

If under these conditions the pulse progressively improves, then the operation should be continued and pushed to a finish as quickly as possible. While the saline infusion is flowing, the assistants should sustain its action by hypodermic injections of strychnin, caffein, camphor, digitalin, ether or dilute ammonia. Enemas of brandy and champagne with hot coffee will also be found serviceable. The saline infusion should be kept up as long as the pulse is not a safe one. When reasonable conditions of fulness and slowness have been reached, the infusion can be temporarily suspended, leaving the canula in the vein, the infusion to be renewed again if the condition of the circulation calls for it. The solution should be hot, not lukewarm, as hot as the hand can comfortably bear it, and the quantity to be administered should be measured solely by the effect on the patient and not by any fixed standard of measurement.

Saline infusion is a remedy that I have learned to trust as an anchor of salvation in almost all great surgical crises in which the heart is flagging and is about to surrender. It is an agent to be relied upon when all other remedies in the materia medica fail. I have seen it bring the pulse back when the picture of death was almost complete and dissolution appeared to be inevitable. Under its magic influence the heart muscle is roused to renewed effort, the stagnant oxygen-carrying corpuscles are again set in motion and the tide of life is restored. Saline infusion has its limitations, but it is in bridging over a crisis when death from shock and hemorrhagic depletion threaten to jeopardize the success of a final heroic effort that it is of priceless value. In the last few years I have performed many operations which I would not have dared undertake and in which, I know, the patients would not have survived the operative act itself, without the vivifying, almost resurrecting, influence of this remedy.

We have noted elsewhere the comparative helplessness of the surgeon in dealing with the collapse of the lung in other conditions in which the pleura is opened and the failure of the expedients that are usually recommended for this purpose to meet the urgent indication of the moment, namely: to restore immediately the aerating function of the injured lung Artificial respiration by any of the recognized procedures, Sylvester's, Marshall Hall's, Howard's, etc., is an absolute failure when practiced on a subject whose pleura is wide open. Simple closure of the chest wound, pulling the collapsed lung with forceps and tacking it to the wound, filling the pleura with warm sterile water, etc.—all these have more or less served their purpose in preventing further collapse of the lung by the admission of air, but they fail totally in restoring its respiratory function at the time when this is most needed. It is in this respect that the Fell-O'Dwyer apparatus, or other appliances (Doyen's) that act on the same principle, viz.: by inflating the lung through an intubating canula introduced in the larynx, are destined to revolutionize all past experience.[5] With it, not only pure air but oxygen is insufflated into the lung, intrapulmonary tension is restored, atelectasis is overcome and a regular rhythmic respiration is maintained. It may be objected that a return of the normal, increased intrapulmonary tension in a collapsed lung will favor the return of hemorrhage by the displacement of clots or increase in the vascular tension; against this objection it may be said that the greater access of the lung that is obtained by inflation will favor the certain and ready obliteration of the bleeding surfaces by suture. Wounds on the inner surface of the lung can be brought to view by lifting the anterior edge of the lung and drawing it out of the wound. Some of these wounds will perhaps be controlled by the thermocautery, but in a general way suture of the wound, followed by anchoring of the lung to the chest wall, by the procedure previously referred to as costopneumopexy (Quénu), will be the simplest and most often available method. It may also be objected that if there is a decided tear in the lung, with or without involving a bronchus, it will be impossible to inflate it. This is very true, but the objection is partially overcome if the wound is sutured carefully while the lung is collapsed; in this way the air-leak can be sealed and there should then be no difficulty in inflating the lung to its full capacity. The thorough exploration of the lung and injured side of the chest while the breathing function of the organ is going on ought also to facilitate the sterilization of the pleura if this shows evidences of contamination; foreign bodies could be removed and the best points for drainage recognized. Ordinary free drainage would favor the return of a partial pneumothorax, even after anchoring the lung to the parietes and closing the external wound; but this can be avoided

[4] For technic and other details, see author's report on "Intravenous Saline Infusion," in the wards of the Charity Hospital of New Orleans from June, 1888, to June, 1891. New Orleans Medical and Surgical Journal, July and August, 1891.

[5] For details of history and application, of the Fell-O'Dwyer's apparatus in the treatment of surgical pneumothorax, see the author's complete address on the "Surgery of the Chest" in the forthcoming Transactions of the Louisiana State Medical Society, for 1898.

in septic conditions—which are exceptional at the time when these interventions are called for—by attaching a canula or glass tube to a receiver connected with an aspirator, e. g., Potain's apparatus. The drainage by progressive aspiration would be sufficient in this way to meet indications until adhesions would have had time to form and thus prevent any further risk of pneumothorax if freer drainage should be ultimately required.

As to the precise method of operating, little need be said; the operations must vary with the situation, extent and character of the wounds. Réclus presents this side of the problem very clearly when he says: "The rules of surgical technic need never trouble the surgeon. The surgeon is taking his chance of what he will find, and his procedure will be according to the exigencies of the case. I will only say that if he has to deal with a wound of the lung, he must make his opening into the chest wall very free, or he will never find the bleeding vessels. Délorme's temporary resection does this for us, but such heroic treatment is full of danger when the patient is wounded, feeble and drained of blood, and the surgeon will have to steer between Scylla and Charybdis, neither to be too sparing with the incisions lest he fail to find the source of the hemorrhage, nor to cut too freely lest the patient come in danger of death from shock."

We believe, however, that the danger of losing valuable time by an insufficient opening is greater than that of inflicting shock, unless it be in the posterior region of the chest, where the ribs are thick and the intercostal arteries are very large. But as a fenestrum in the lateral aspect of the thorax should suffice to expose the entire external surface of the lung, and the internal also, if the organ is lifted up, and dragged out of the chest, it is not likely that posterior thoracotomies will ever be required or attempted. In this region it is comparatively easy to control the bleeding from the intercostals with hemostats, and to cut the osteoplastic flap quickly with a sharp costotome. It is very probable that the bleeding in the lung will always be best controlled by suturing with an absorbable material, chromicized or cumolized catgut being preferred. In view of the ease with which the lung tears, and also for fear of puncture-leaks, a round milliner's needle or intestinal needle should be used. Thus far hemostasis has been attempted only by packing with gauze, three cases (Quénu, Michaux, DaCosta); by tying the bleeding surface and cutting off the pedicle above the ligature (Omboni); by sutures (Délorme and Robert, Turetta, P. Ferraresi). It is possible that the thermocautery may also be useful; on this point, as on many others, the surgeon must act according to his convictions and opportunities.

In making these suggestions I again wish to be understood as not underrating the gravity of the circumstances in which these operations are performed. I recognize only too well that there will ever be a certain percentage of penetrating chest wounds which will inevitably end in death, no matter what the resources of surgical science and art may be, just as there will be others that will recover without treatment, with the simplest mode of treatment, and even in spite of treatment. But there is an intermediate zone, occupied by those who are not killed outright after these injuries, and those in whom it is evident from the first that they have not sustained a mortal injury; it is this doubtful zone which will furnish the battle-ground in which it will be possible for timely and skilful intervention with the new aids here described—to tip the balance so that some will live who would otherwise die.[6]

Original Articles.

EPIDEMIC CEREBROSPINAL MENINGITIS.

BY W. J. CLASS, M.D.

MEDICAL INSPECTOR CHICAGO HEALTH DEPARTMENT, CHICAGO.

(*Continued from page 646*).

SYMPTOMS.

Among the different classifications of this disease, that of Hisch[49] is probably the best, although like every subject whose different phases approach each other, this disease can not be divided into distinct forms without there being some cases which belong partly in one form and partly in another. Hisch's classification is: 1, meningitis cerebrospinalis epidemica siderans; 2, meningitis cerebrospinalis epidemica abortiva; 3, meningitis cerebrospinalis epidemica intermittans; 4, meningitis cerebrospinalis epidemica typhoides.

Under the first form come those cases which commence with violent initial symptoms, agonizing headache, backache, chills, high temperature, uncontrollable vomiting, coma and death within a period varying from twenty-four hours to two or three days. Cases of this nature were of frequent occurrence in the older epidemics, but have of late years become rare.

That type called the abortive[50] has also been of unfrequent occurrence in the later epidemics. In it the initial symptoms are also of a marrow-freezing nature, resembling in severity those of the first form described, but instead of ending fatally, the patient after two or three days makes a remarkably quick and permanent recovery. Cases resembling the description of this form were not unfrequently found in young children during the Chicago epidemic, but the consensus of opinion was against their being true cases of cerebrospinal meningitis; the vast majority being found in cases where dietary errors had been committed, recovery generally following a cleaning of the gastro-intestinal tract.

The cases which might be classified as intermittent are usually those which run a protracted course, lasting six to eight weeks or longer. In these lengthy cases it will sometimes occur that all alarming symptoms disappear, sometimes with surprising rapidity, and the patient be apparently on the road to recovery, when a relapse occurs, the case taking possibly a fatal ending.

Cases of medium duration are by far the most frequent, lasting two to four weeks, and frequently passing into a sort of typhoid condition. The disease begins as a rule quite suddenly, with severe headache, chiefly in the occipital region; pain in the cervical region and stiffness of the neck, and a general feeling of debility. Quite frequently there will be vomiting, which, especially in children, may be uncontrollable. With these initial symptoms there is as a rule some rise in temperature. In the majority of cases disturbances of the sensorium soon follow in the wake of the

[6] The detailed reports of the published cases of bleeding wounds of the lung that have been treated by direct surgical intervention, and the bibliography of the subject will be found in the forthcoming volume of Transactions of the Louisiana State Medical Society for 1898.

other symptoms; they vary in severity from simple dizziness and drowsy feeling to a distinct delirium. An initial chill is sometimes met with.

The headache in cerebrospinal meningitis is usually very intense; as a general rule it is most marked in the occipital region, extending down the back and in some cases radiating into the shoulders. The pain may be of a throbbing character which keeps up constantly, even when under the influence of opiates. In some of the severer cases, the patient will frequently moan and roll about, denoting a pain which, in a large number of instances, death alone can conquer. In a smaller number of cases the pain is neuralgic in character, there being periods of comparative ease between the paroxysms. With the extension of the inflammatory process to the spinal meninges, there is tenderness of the entire vertebral column, which through contracture of the erector muscles of the spine is stiff and straight, sometimes even decidedly opisthotonic, the head being drawn backward. The cranial and spinal nerves in this disease present an interesting variety of disturbances, most frequent among them being those affecting the motor nerves of the eye, such as inco-ordinate movements of the eyeballs, nystagmus, inequality in size of pupils, and tardy reaction to light and accommodation.

Lagophthalmus was noticed by Blümm.[51] Ptosis was an early prominent symptom in the Viennese cases described by Schroetter.[52] In the territory supplied by the facial nerve, muscle contractures are of frequent occurrence, giving the face a peculiar drawn expression. The nerves of special sense are also often implicated, so for instance Stovell[53] describes a case in a child where there was temporary blindness extending over a period of five months, the optic disc being bluish and indistinct; a similar case was also reported by Presser.[54] Thompson[55] and Randolph[56] report cases of trophoneurotic ulceration of the cornea; Knapp[57] saw ten cases of cerebrospinal meningitis with intraocular disease, in all but one, blindness being the result; this complication came on during the second or third week of the disease, and, after a course of three to four days, ended in blindness. Knapp considered it as a hyperplastic choroiditis with consecutive retinal detachment. Flexner and Barker,[58] in a description of an epidemic in Lonaconing, state that out of thirty-five cases the fundus oculi was normal in only seven. Difficulty in hearing, and other disturbances of the ear, have been of frequent occurrence in some epidemics, among others in the one described by Blümm.[51] The auditory nerve itself may be influenced and pus may be found in the labyrinth. Disturbances of the spinal nerves are less frequent, among the most frequently noted being hyperesthesias and twitchings of the muscles of the extremities. Contractures of the limbs have also been met with.

Belor,[59] in his description of an epidemic in Aranzo, states that hemiplegia was of frequent occurrence. Bernhardt[60] mentions a case in which there was paraplegia, followed by paralysis of both the upper and lower extremities, while the bladder and rectum remained intact. Among other forms of paralyses may be mentioned a case by Gahlberg,[61] in which there was paresis of the tongue, and one by ——,[62] which was followed by a loss of the power of articulation. The mucous membranes were affected in a number of epidemics described. Berg[63] states that in the epidemic of 1893, in New York City, conjunctivitis and photophobia were present in almost every case. Strümpel says a considerable number of his cases were preceded by nasal catarrh. The reflexes are not uniform in their behavior in this disease; the skin reflexes as a rule are somewhat exaggerated, while the tendon reflexes are sometimes so affected; in other cases they are retarded. In a large number of cases there is no deviation from the normal. Skin symptoms were very prominent in the earlier epidemics; in the later ones, a herpetic eruption on the lips and face was the only cutaneous lesion to which importance could be attached. Other eruptions, such as roseola, urticaria, petechiæ, etc., have also been observed. Disturbances of the gastro-intestinal tract other than the initial vomiting are rare. Loss of appetite and more or less irregularity of the fecal movements occurred in the severer cases, but presented nothing characteristic. The spleen is sometimes enlarged, but rarely to the extent of the typhoid spleen. Multiple joint lesions have been observed in some epidemics. Kotsonopulos,[64] in an epidemic described by him, found acute inflammation of the joints in a large number of cases, as did also Berg[63] in the epidemic in New York in 1893.

The genito-urinary apparatus is not as a rule affected, although albuminuria has been of frequent occurrence in some epidemics; polyuria and glycosuria have also been observed. The lungs are frequently affected in the severer forms of the disease; hypostatic and "schluck" pneumonia occur occasionally in the later stages. Anatomic disturbances of the heart are rare, endocarditis being the one most often found. The pulse-rate is usually slightly increased, but not in proportion to the height of the temperature. Leucocytosis is almost constantly present. The temperature shows no regularity, and its height is not proportionate to the severity of the disease; fatal cases sometimes run their course with little or no rise in temperature. The majority of cases show an irregularly remittent type of fever. There is no distinct evening rise in temperature; in some cases, the morning temperature will even exceed that of the evening. Increasing severity of the cerebral symptoms is not as a rule attended by a corresponding rise in temperature. In fatal cases there is often hyperpyrexia shortly before death, temperatures of 109 and 110 F. having been observed. After the disease has run its course favorably, the patient is, as a rule, left in a greatly exhausted and debilitated condition. Temporary or permanent deafness is a frequent sequence of the disease. Disturbances of vision often remain, giving evidence of intraocular lesions. Permanent paralyses of the motor muscles have also been observed after recovery, but are comparatively rare. Where the disease has occurred in young children, the mental faculties frequently remain permanently impaired.

DIAGNOSIS.

During the presence of a well-marked epidemic, the diagnosis of cerebrospinal meningitis as a rule presents little difficulty. More difficulty is encountered in the diagnosis of sporadic cases, especially when they come under observation for the first time when already in a delirious or unconscious condition, as is frequently the case in those sent to the hospitals, especially if no history is available. In these cases it becomes necessary to exclude typhoid fever, tubercular meningitis, miliary tuberculosis and some of the severer septic disturbances. From a diagnostic standpoint, the most important symptoms are the characteristic headache, the rigidity and tenderness

of the nape of the neck, the herpetic eruption and the well-marked leucocytosis. If it can be made, a lumbar puncture will usually show conclusive evidence as to the nature of the disease. During the Chicago epidemic, typhoid fever was sometimes confused with this disease. Below are given some of the differential features between the two conditions:

CEREBROSPINAL MENINGITIS.	TYPHOID FEVER.
1. Onset, as a rule, sudden with nausea, vomiting and frequently a chill or chilly sensation.	1. Onset, as a rule, gradual, with malaise and bronchial catarrh.
2. Temperature during early stage very irregular, may be high or may be normal. No step-like increase. (See charts.)	2. Temperature during early stage usually regular between 100 and 108 degrees F. Step-like increase in the evening, temperature of each day being slightly higher than that of the preceding day.
3. Headache very agonizing.	3. Headache of a less severe type.
4. Tenderness of cervical column and retraction of head.	4. Tenderness of abdomen, cervical column normal.
5. Abdomen retracted, boat-shaped.	5. Abdomen prominent, often tympanitic.
6. Herpetic eruption on lips, sometimes petechial spots.	6. Rose spots on abdomen.
7. Spleen rarely enlarged.	7. Spleen enlarged and palpable.
8. Conjunctivitis and photophobia of frequent occurrence.	8. Very rare.
9. Fever irregular, no constant evening rise.	9. Temperature during fastigium uniformly high, with evening exacerbation.
10. Pulse-rate not as a rule very frequent, does not increase with temperature, except in some instances.	10. Pulse rapid, its increase is generally proportionate to the increase in temperature, often dicrotic.
11. Urine as a rule normal, diazo reaction negative.	11. Urine often slightly albuminous. Diazo reaction positive.
12. Blood shows large and constant increase in leucocytes. Widal test negative.	12. Leucocytosis exceedingly rare. Widal test positive.
13. Joints frequently affected.	13. Joints rarely affected.
14. Bowels as a rule regular.	14. Obstipation during early part of the disease; after second week, slight diarrhea with "pea-soup" stools.
15. Tongue has no characteristic coating, frequently not coated at all.	15. Tongue coated thickly in center, edges and tip are clean.
16. Convulsions in children and twitching of muscles in adults frequent.	16. Convulsions and twitchings of muscles rare.
17. Paralysis of frequent occurrence.	17. Paralysis very rare, and then only as sequelæ.
18. Disturbances of sensation (hyperesthesia, etc.).	18. Not present.
19. Lumbar puncture shows increased pressure in spinal canal, and a superabundance of cerebrospinal fluid.	19. Lumbar puncture negative.
20. Duration of disease very variable.	20. Duration of disease usually three to four weeks.

Tubercular meningitis.—The diagnosis of this disease from the epidemic form sometimes offers considerable difficulty, especially if there is no clear family history and an absence of tubercular lesions elsewhere. The chief differential points are as follows:

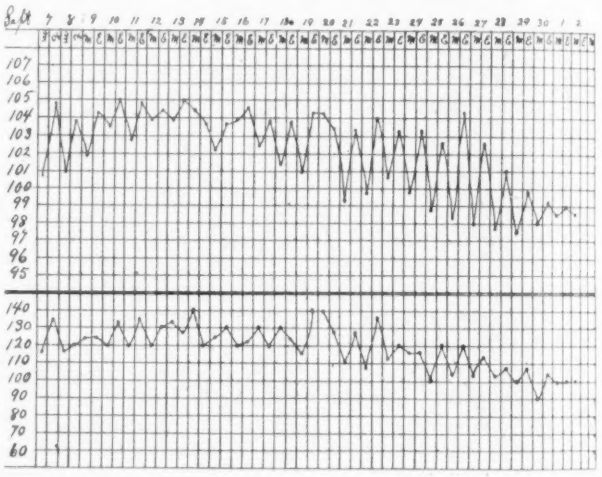
EPIDEMIC CEREBOSPINAL MENINGITIS.	TUBERCULAR MENINGITIS.
1. Family history as a rule negative.	1. Generally tubercular family history, and tubercular lesions in other parts of the body, most often in lungs.
2. Occurs at all ages, most frequent between the ages of 10 and 20.	2. Cases generally occur in children under 10 years of age.
3. Onset sudden.	3. Onset gradual.
4. Delirium early in disease.	4. Delirium late in disease.
5. Temperature as a rule comparatively high.	5. Rise in temperature as a rule very slight.
6. Occurs as a rule in epidemics.	6. Is never epidemic.
7. Affects chiefly the convexity of the cerebrum.	7. Affects chiefly the base of the brain.
8. Cerebrospinal fluid during acute stage contains meningococci, later sterile.	8. Cerebrospinal fluid contains tubercle bacilli.
9. Herpes frequently present.	9. Herpes never occurs.

The meningitic symptoms in cases of *pneumonia* are sometimes of such a nature as to resemble true cerebrospinal meningitis. There are, however, in these cases, rarely retraction of the muscles of the neck or opisthotonos. The eye and joint symptoms are also as a rule absent. Undoubtedly, however, pneumonia and cerebrospinal meningitis caused by the meningococcus may exceptionally occur together. Certain *septic conditions* may sometimes simulate cerebrospinal meningitis. A careful search for the causative factor and a consideration of all the symptoms will, as a rule, soon clear the diagnosis. In some epidemics of *influenza* cases have occurred which resembled cerebrospinal meningitis; when any doubt exists in this respect, however, a bacteriologic examination of the mucus from the nasopharynx will as a rule speedily clear the diagnosis, as that from an influenza patient generally teems with Pfeiffer's bacilli.

PROGNOSIS.

The physician, in expressing an opinion as to the probable outcome of a case of cerebrospinal meningitis, should avoid all positive assertions. Although, as a rule, in the epidemics of later years the majority of patients have recovered, the mortality seldom exceeding 30 per cent., the outcome of any individual case is always doubtful; and even should the disease not end fatally, its ravages often leave the patient a mental and physical wreck. In estimating the patient's chances as to recovery, the condition of the pulse and temperature offer no index; more to be relied upon are the cerebral symptoms. A delirium of a noisy character, the patient tossing about and grasping at imaginary objects, augurs ill; a prolonged state of unconsciousness, especially when setting in early, is also of grave significance.

Severe vomiting, which is difficult to control, means a fatal ending, or at any rate slow convalescence on



Temperature and pulse chart. Typhoid fever (Osler).

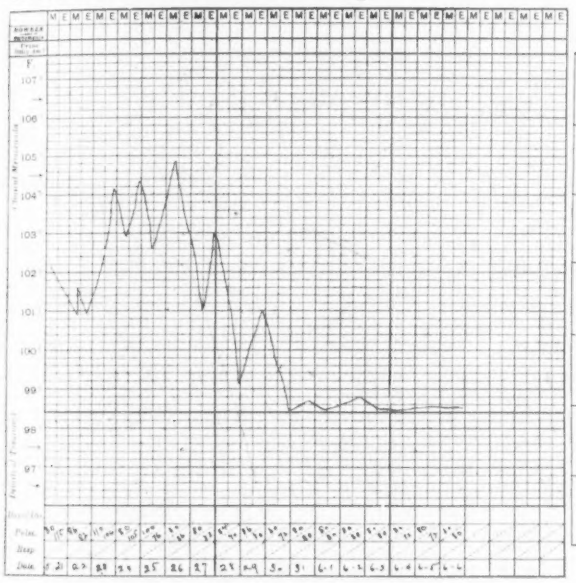
account of the exhausted condition in which it leaves the patient. Involuntary evacuations of urine and feces denote extensive destruction of nerve tissue. Dysphagia is an almost certain sign of approaching dissolution. Ulceration of the cornea or intraocular lesions usually mean an extensive and virulent type of inflammation. On the other hand, if the vomiting is easily checked and a fair amount of food is assimilated, the mind being only slightly clouded, and the second or third week of the disease being reached without any of the unfavorable symptoms previously mentioned occurring, the prognosis may be set down as favorable, even though the temperature remains high. Unforeseen complications which may occur and frequently do occur in apparently the most favorable cases, must be taken into consideration when expressing an opinion.

TREATMENT.

Little can be said on this subject, as the treatment of cerebrospinal meningitis is at present still purely symptomatic. The therapeutic value of lumbar punc-

ture is still doubtful. Although some cases where it has been performed with apparent beneficial results have been reported, the amelioration of the symptoms in these cases was probably due to the reduction of intracranial pressure exerted by the fluid withdrawn. Ice-bags to the head and spine are almost universally used and have a tendency to diminish the pain. Hot baths have recently been advocated by German writers, but the philosophy of this mode of treatment is not quite clear. Narcotics are indicated if the pain is very severe. Considering the probable origin of the disease, frequent nasal douches with mild antiseptics are considered advisable as a prophylactic measure.

The cases here cited occurred under the observation of a number of skilled diagnosticians. All uncertain and doubtful cases were eliminated, thus curtailing the number, but we hope its value is thereby increased. One regrettable feature is that a large number of post-mortem records were not available. The records are as exhaustive as was considered necessary, although varying somewhat in detail by being collected from a number of hospitals.

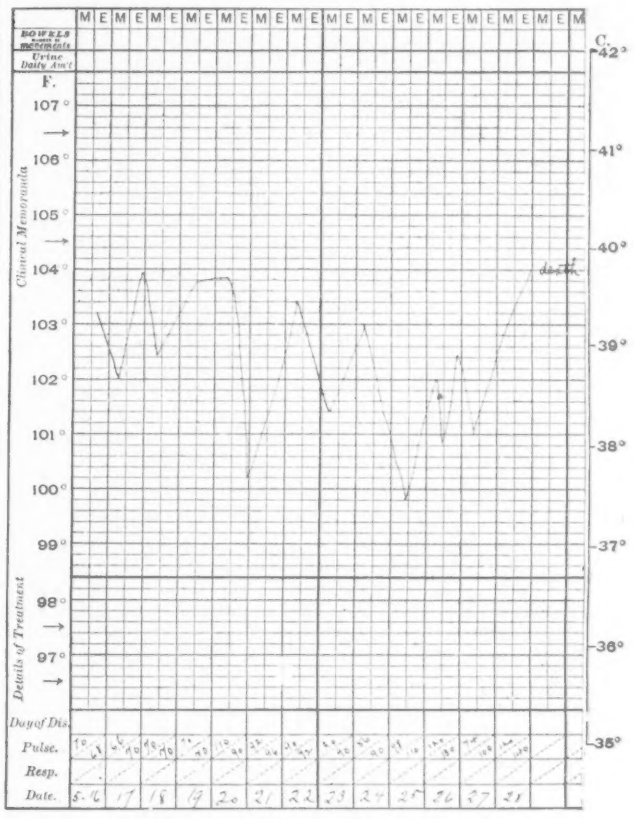


Case 7.—Cerebrospinal meningitis. Recovery.

Case 1.—Male, aged 24, admitted July 1, 1898; has been sick six days; last Saturday had a chill, followed on Tuesday by another, with vomiting, headache, backache, diarrhea, fever, delirium, rigidity and tenderness of neck and back; eyes congested, dull; tongue thickly coated; gurgling in iliac fossæ; slight tympanites; rigidity and retraction of abdomen; temperature 103 degrees F.; pulse 74; lumbar puncture made, no fluid obtained; discharged recovered, Aug. 3, 1898.

Case 2.—Male, aged 45, admitted June 17, 1898; five days before taken suddenly with vomiting and diarrhea, followed by severe headache, backache and pains in the extremities; when first seen complained of severe headache; mind very dull; patient constantly stroked his head and neck with his hands, and groaned; great tenderness on pressure; pupils contracted and equal, reacted normally; no ocular nor other paralysis; pulse 48, regular, full and soft; temperature 98; respiration 28; no eruption; the night following was in continuous pain and very restless; morphin. The pulse remained slowed and the temperature on the day following ranged between 100 and 101 degrees. During the following day the pulse remained slow, while the temperature on the 22d reached 103 degrees, with a pulse of 68. Headache and mild delirium continued. No new symptoms were observed except a slight right sided facial paresis. An opthalmoscopic examination on the 22d showed no change in the fundus; there was a marked cupping of the right disc. The delirium became more marked and continuous; headache and tenderness with rigidity of the neck persisted; but under the influence of bromids or morphin the patient slept four to six hours during the night. The pulse increased in frequency; on the 25th it ranged from 100 to 120; temperature 100–102.4 degrees. Lumbar puncture was made on the 26th, 20 c.c. of fluid being removed, from which cultures were made showing the diplococcus of Weichselbaum. The puncture was followed by apparently beneficial results; patient discharged recovered. (Case reported by Bassoe, JOURNAL AMERICAN MEDICAL ASSOCIATION, July 23, 1898.)

Case 3.—Male, aged 7, admitted April 3, 1898; taken sick three days previous with chill, vomiting, headache, rise in temperature. On admission is delirious, head retracted, eruption on lips, tenderness along spine; temperature 100 degrees; pulse 78. April 6, abdomen retracted, pupils dilated, most so on left, delirious. April 10, patient somewhat better, delirium abated. April 12, complains of pains in wrists, tender on pressure. April 18, temperature normal, patient takes more interest in surroundings. May 5, discharged recovered. No lumbar puncture was made.



Case 8.—Cerebrospinal meningitis. Death.

Case 4.—Female, aged 12, admitted April 7, 1898; history of sudden onset with vomiting and severe headache; on admission, delirious, head retracted, spine tender, slight strabismus, abdomen retracted; temperature 103 degrees; pulse 122; temperature very irregular during the course, as high as 105.5 one day, the next day not over 100 degrees. Discharged in about two months; no lumbar puncture.

Case 5.—Male, aged 40; taken sick June 10, 1898, with severe head and backache, also vomiting. On admission, June 14, there was severe headache, causing sleeplessness; the neck rigid and painful, with but slight retraction; no paralysis; over abdomen and thighs were many petechial spots; mind clear, but the patient constantly complaining of his head. He lived until 10:45 P.M., June 19, dying on the tenth day from the onset. During the last thirty six hours the pulse became more rapid. He never vomited after admission. He gradually became wildly delirious. The petechial spots faded somewhat before death, no new ones appearing. There was no herpes. No paralysis was at any time made out. Post-mortem: Entire pia infiltrated with a thick purulent fluid, especially marked about posterior margins of the cerebellum. The amount of cerebrospinal fluid is small, but the lateral ventricles contain a quantity of purulent fluid, which in the horns becomes thick pus; walls of the ventricles soft. There is exudate around the upper end of the spinal cord, but the spinal canal was not opened. Cultures from the meningeal exudate showed a coccus, with all the characteristics of the diplococcus intracellularis meningitidis. (Case reported by Herrick, JOURNAL AMERICAN MEDICAL ASSOCIATION, July 2, 1898.)

Case 6.—Male, aged 45, admitted June 24, 1898; very delirious; temperature 101.2 degrees; taken sick two or three days before; had severe pains in back; headache, soon followed by delirium; eyes congested, boat-shaped abdomen, coma, casts; lumbar puncture made, and 30 c.c. of clear fluid removed; pressure in spinal canal, 205 mm.; sp. g. of fluid, 1006; bacteriologic examination of fluid negative; patient lived twenty-four hours after admission; no post-mortem.

Case 7.—Male, aged 24, admitted May 21, 1898; about six to eight days before, began to complain of head and backache; about three days afterward had a chill, followed by vomiting, severe headache, pain in abdomen, fever and delirium; tongue coated in center; gurgling and tenderness in iliac fossa; spleen enlarged and palpable; herpes; head retracted, tenderness over cervical vertebræ; blood examination for typhoid, negative. This case showed only a slight decrease in temperature after a bath was given. Lumbar puncture was not made. Delirium and other symptoms gradually abated; patient discharged June 9.

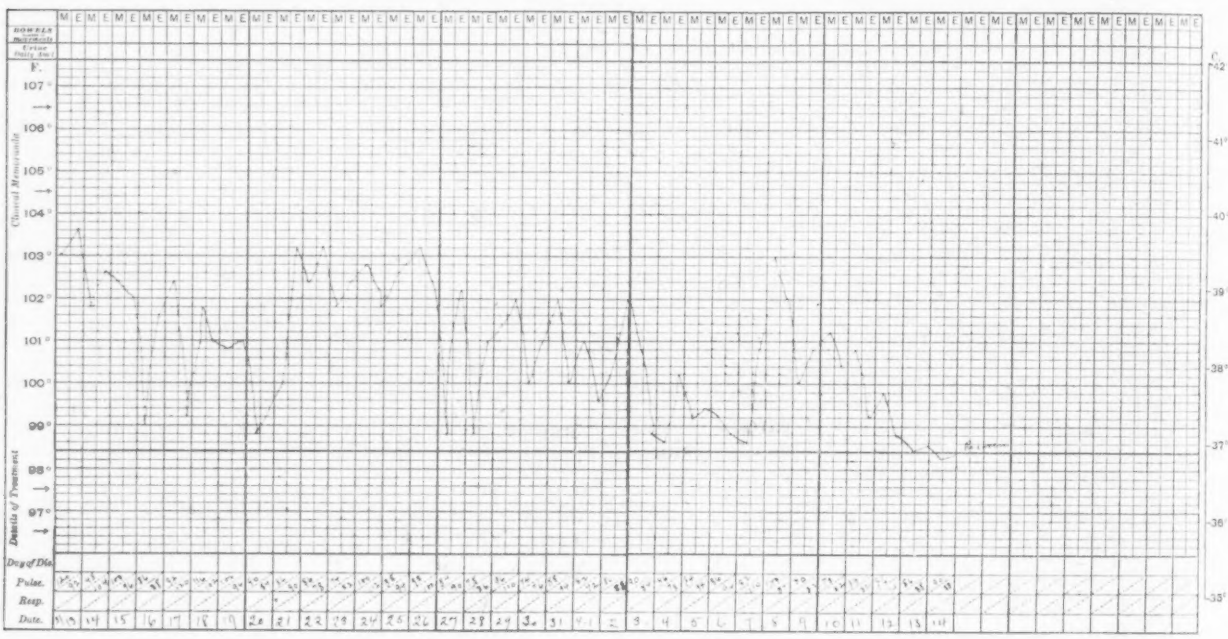
Case 8.—Male, aged 15, admitted May 16, 1898; about eight days before, complained of pains in arms, eyes congested, bone and backache; then he lay on the floor in a draught a couple of hours, asleep; next day had a severe headache and vomiting, fever and delirium; pain in back of neck, with retraction of head; delirious and restless; tongue coated; constipated; May 20, trophoneurotic ulceration of left cornea; catarrhal conjunctivitis of left eye; May 26, facial paralysis on left, May 28, general paralytic condition; puncture between third and fourth lumbar vertebræ, 65 c.c. of clear fluid removed; pressure in spinal canal, 750 mm.; sp. gr. of fluid, 1007, slightly albuminous; bacteriologic examination negative; died May 28; no post-mortem.

Case 9.—Male, aged 22, admitted March 13, 1898; pain in back of neck, back and legs, came on very suddenly, with chill, nausea and vomiting four days previous to admission; has persisted since; most severe in back of neck; retraction of head; cries out with pain when head is flexed; pulse 120; temperature 103 degrees F.; tongue coated; abdomen boat-shaped; reflexes increased; muscles tender; no albumin in urine; no puncture; patient discharged April 22.

Case 10.—Male, aged 21, admitted April 19, 1898. Four days previous to admission he was taken with a very severe headache, the next day had a chill, and then ached all over; last three days has vomited everything that he has taken; two days ago began to have stiffness in the neck, was constipated, and suffered from insomnia; well nourished, pale, nystagmus, increased patellar reflex; on standing is very dizzy; tongue slightly coated, spleen enlarged and palpable. Patient made a gradual recovery, and was discharged May 15; no puncture.

Case 11.—Male, aged 18, admitted April 29, 1898. The patient had been complaining for two weeks, of headache, pain in limbs, chilliness and weakness, also had a cough; April 20, had cough, pain in abdomen and tympanites; April 28, very restless at night, could not sleep, very severe headache, anodynes did not produce sleep; April 29, delirious, rigidity of neck first noticed yesterday morning, left hand hyperæmic and puffy; April 30, severe chill lasting thirty minutes; May 2, involuntary evacuations of urine and feces; muttering delirium; patient has double vision; May 4, patient complains of severe pain in pit of stomach; May 6, some improvement, slept well; May 7, not much change; May 10, slightly delirious, subsultus tendinum very marked; May 12, very restless and delirious, involuntary evacuations; May 20, less delirious; May 23, pupils very much dilated; May 25, pulse very irregular; May 26, 9 A.M., became cyanosed and could not be aroused from stupor for about twenty minutes, then seemed to sleep quietly, respiration regular, pulse 70; died suddenly at 3 P.M.; no post-mortem.

Case 12.—Male, aged 40, admitted March 20, 1898; at five previous evening had severe pain in epigastrium; was able to work during the day; at 2 A.M. began to vomit; has vomited three or four times since; vomitus slightly tinged with blood; entered hospital intoxicated, but previous to last night had drunk no liquor for eight months; mind clear but apathetic; well nourished; skin dry and hot; pupils react; tongue coated at sides; spleen not palpable; extremities negative; reflexes diminished. Temperature 101 degrees F.; pulse 120 on admission; March 23, epistaxis, pain in head and neck; March 25, for last twenty-four hours patient has complained of pain in left ankle and shoulder. Examination shows slight redness,

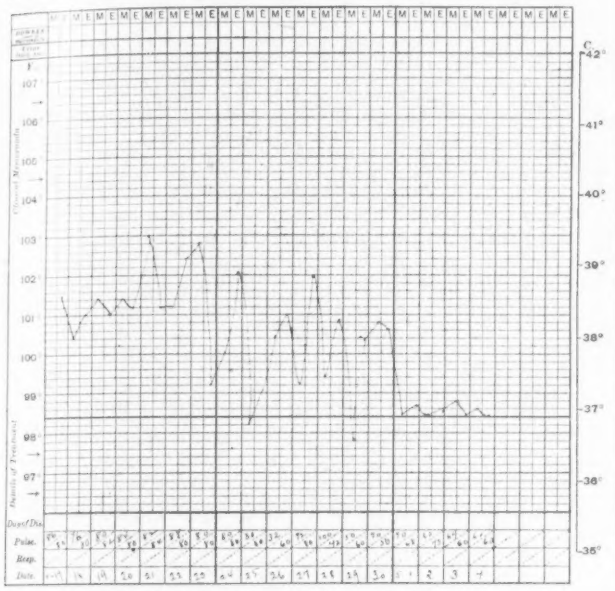


Case 9.—Cerebrospinal meningitis. Recovery.

swelling and considerable tenderness; March 30, symptoms continue; April 2, ankle-joint symptoms almost subsided; April 5, patient semiconscious, pupils dilated, the right larger, react to light; moves hands aimlessly, fingers of right clutched; involuntary urination; face drawn to left; right hand apparently paralyzed; died 5 A.M., April 6.

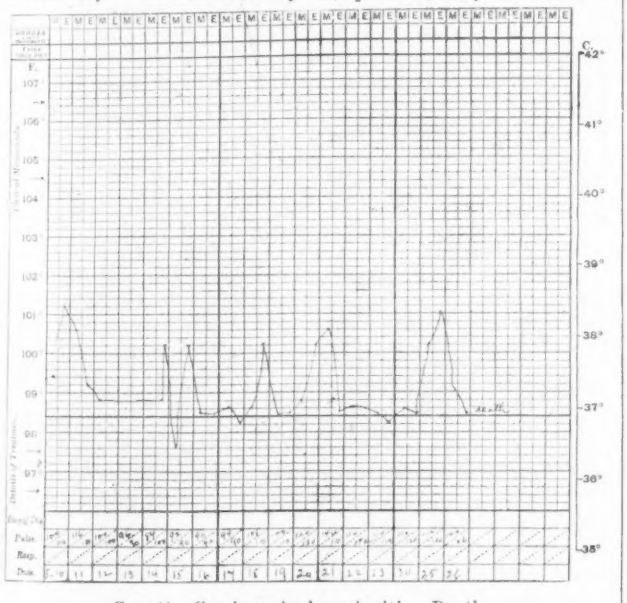
Case 13.—Female, aged 25, admitted March 4, 1898; three days ago was taken with pain in left wrist, headache, vomiting and fever; was very nervous and had one or two convulsions; not unconscious during the attacks; complained of pain in precordial region; wrist was very sore, red and swollen; had been sore before but began to be worse at this time; could not sleep at night; four years ago had an attack of rheumatism which lasted three weeks. She says she does not know of having had any heart trouble at that time; face flushed; expression dull; tongue moist, not much coated; eyes react to light; pulse 118, regular; temperature 102.5 degrees F.; loud systolic murmur heard plainest at apex; no friction sound; spleen not palpable; no rose spots, no tenderness; urine albuminous; very slight edema of legs; March 5, had been delirious during night; March 14, severe headache; March 16, delirious during night; March 18, patient apparently in stupor; has convergent strabismus, pupils small and sluggish; patellar reflex on right marked, absent on left; sensation and motion good in both arms and legs; strabismus not constant, can move eyes through whole of arc; no facial paralysis; March 21, involun-

tary evacuations of urine and feces; March 22, profuse perspiration over whole body; has pain in stomach; vomited colorless liquid; March 24, more conscious; complains of constant headache; March 26, appears somewhat improved; March 31, patient complains of pain in back and lower part of body; April 1, tremor in right hand and arms; conjunctiva injected; no pain in head or neck though rigid; April 7, not much change; sweats profusely; April 9, has difficulty in swallowing; April 10, gradually growing weaker during night; died at 8:40 P.M.



Case 10.—Cerebrospinal meningitis.

Case 14.—Female, aged 28, admitted May 10, 1898; patient delirious; no history obtained; general nutrition good; pupils react; tongue has a brownish coating; abdomen somewhat prominent and tender, spleen not palpable; temperature 103 degrees F.; pulse 108; May 12, delirious, very restless; May 13, muscles twitch from head to foot; tries to get out of bed; involuntary evacuations; May 15, quieter; May 16, back of

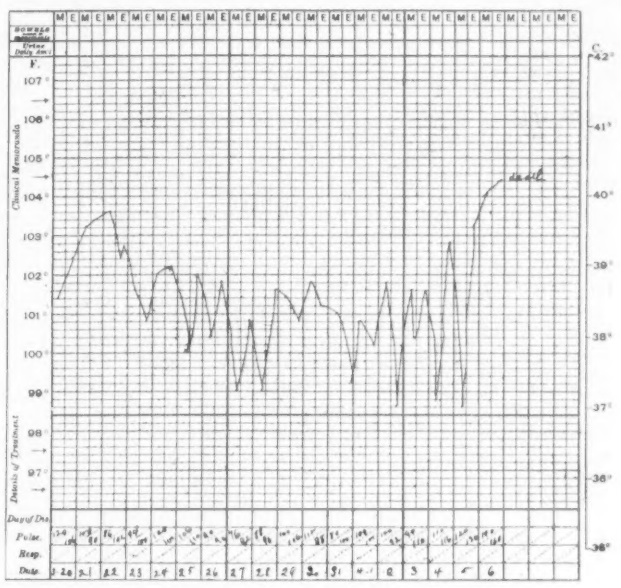


Case 11.—Cerebrospinal meningitis. Death.

neck very painful; May 18, difficulty in swallowing; May 20, lay in stupor all night; died at 11:30 A.M. Temperature at no time very high, there being little difference between morning and evening temperature. Shortly before death it became normal.

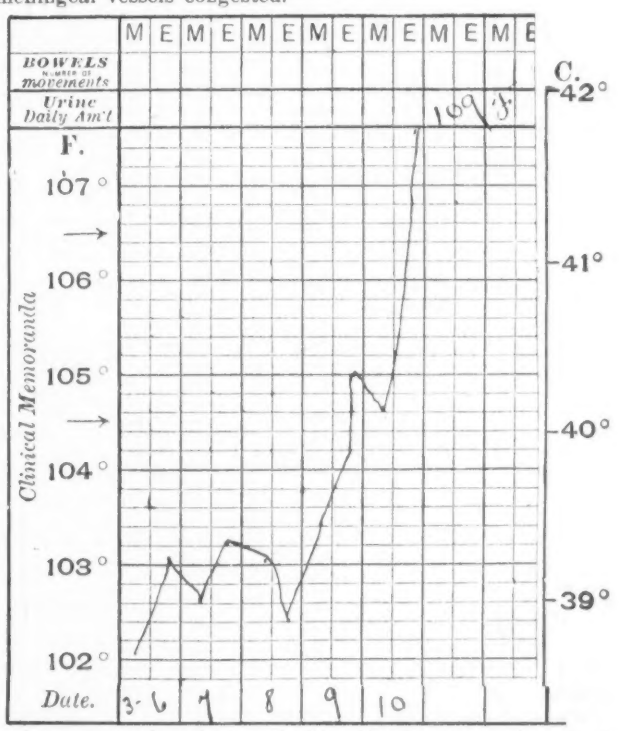
Case 15.—Male, aged 20, admitted April 22, 1898, was taken sick about a week ago with prodromal symptoms of typhoid; face flushed, tongue broad and dry; abdomen rather distended, tenderness in iliac and splenic areas; no rose spots; skin dry; patient chilly; headache; tenderness over cervical vertebræ; vomited medicines; April 24, slept but very little, was restless, but did not vomit after 2 A.M. April 25, vomited greenish fluid, could not retain nourishment. April 26, face flushed, eyes dull, pupils dilated, tongue very dry and glazed, abdomen distended, tender; patient delirious. Delirium gradually gave way to coma, and patient died April 28, 12:10 P.M.

Case 16.—Male aged 40, admitted Jan. 9, 1898, lies on his back motionless, oblivious to surroundings; eyes open; nystagmus; face flushed; skin moist; pupils react; abdomen depressed; spleen not palpable; reflexes somewhat exagerrated;



Case 12.—Cerebrospinal meningitis. Death.

January 10, seems to understand some things; involuntary evacuations; January 12, conjunctiva congested; died at 9:30 P.M. Post mortem examination of brain shows dura mater adherent to pia, especally along superior longitudinal fissure; meningeal vessels congested.

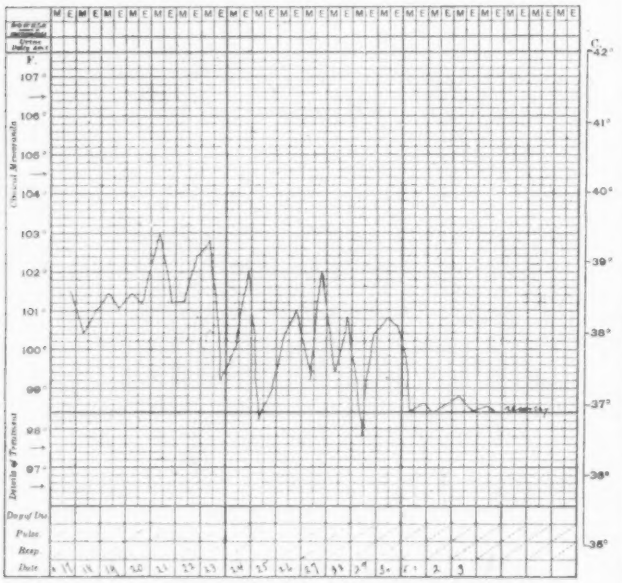


Case 13.—Cerebrospinal meningitis. Showing ante-mortem rise in temperature.

Case 17.—Male, aged 24, admitted April 2, 1898, had been on a spree, and four days ago, when he awoke after the spree, felt very sick, complaining of a severe headache, vomiting and pain in the bones; says that he is very nervous and can not sleep; is often nauseated; nutrition excellent; pupils react; spleen not palpable; abdomen slightly tympanitic; temperature 103.2

F.; pulse 108; April 4, very delirious, April 5, patient complains of very severe headache and pains in back of neck; during afternoon became semicomatose; is rigid; tenderness and hyperesthesia along spine; marked tremor in hands and same in muscles of face; herpes on lips. April 6, head drawn toward the left; conjunctiva congested; breathing rapid; subsultus tendinum; swallowing difficult; died April 8. Post-mortem: Veins of dura distended; vessels of pia injected; over convexity of hemisphere, especially along course of vessels, is a tenacious yellowish exudate, apparently purulent; all the vessels of the membrane are markedly distended: great deal of turbid fluid escapes when the dura is cut; lateral ventricles not distended; one or two small areas of exudate around vessels at base; about upper extremity of spinal cord is seen seropurulent fluid; spinal canal not opened.

Case 18.—Male, aged 33, admitted April 6, 1898; present illness began Tuesday morning with headache and backache; no vomiting; bowels constipated since Tuesday; herpes since Wednesday; patient walked to the hospital; has been drinking some; stupid, slightly restless; eyes normal, except dull: pupil normal; lips covered with vesicles; heart shows no abnormality; abdomen not distended; area of splenic dulness slightly increased; reflexes slightly diminished; April 4, in evening, patient almost comatose; April 5, patient has difficulty in swallowing; rigidity of neck. April 6, patient comatose, died same day. Post mortem: Convexity and base of entire brain covered with fibrinopurulent exudate; substance soft; cerebrospinal fluid poured from spinal canal is slightly turbid; cocci and diplococci found in exudate, not enclosed in cells.



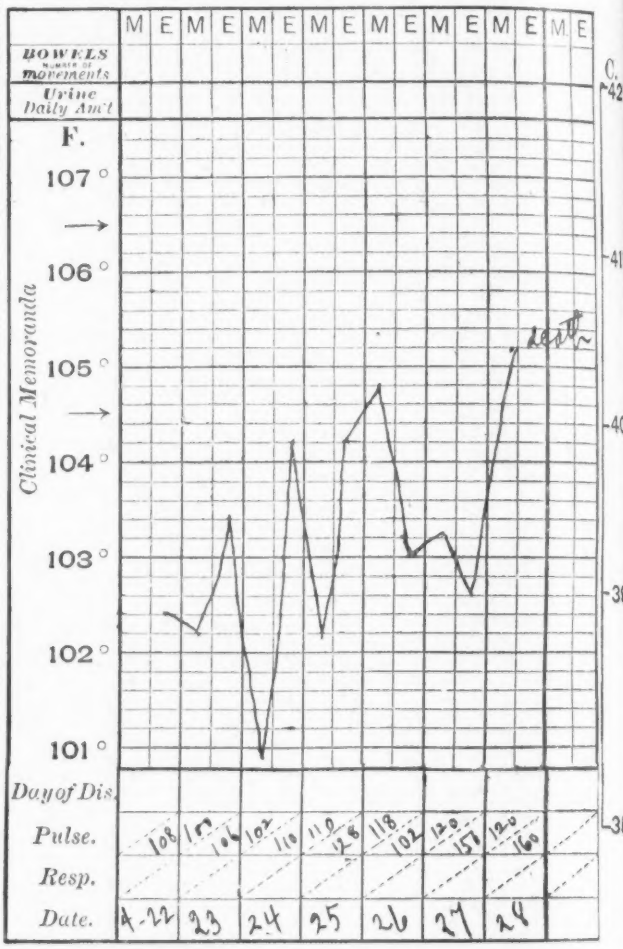
Epidemic cerebrospinal meningitis.

Case 19.—Male, aged 19, admitted April 28, 1898; illness began about a week previous, with headache and vomiting; somewhat emaciated; very irritable; mind lethargic; is, however, readily aroused; cries aloud; temperature 99.2 F.; pulse 120 and very weak; pupils react, right more readily than left; nearly deaf in left ear; tongue seems swollen; neck retracted; spinal muscles rigid; shoulders permanently shrugged; marked *taché cerebrale;* abdomen retracted; patellar reflexes not demonstrable; April 29, patient delirious; April 30, slight nystagmus and paresis of left side of face; eyes do not move together; apparent paresis of right external rectus; died April 30, 10:30 P.M. Post mortem: On pia, especially about commissures, is a thick purulent exudate; dura negative; overconvexity of lobes; along vessels is some purulent exudate; pia everywhere injected; vessels involved in a mass of exudate; lateral ventricles are unchanged; brain substance is soft.

Case 20.—Male, aged 4, admitted April 18, 1898; present illness began suddenly about noon, April 16, with vomiting and headache; vomiting continued almost incessantly all through the day and night; about 2 P.M., April 17, became unconscious and had twitching movements of the extremities about every twenty minutes; when conscious could not see; eyes, mouth and throat negative; head drawn back to slight extent, and slight rigidity of neck muscles; also tenderness along nape; reflexes normal; semicomatose; died May 19, 1898; no post-mortem made.

Case 21.—Male aged 5, admitted April 25, 1898; was taken suddenly ill two days ago; had repeated convulsions on day that he was admitted; temperature normal; pulseless at wrist; respirations 36; rigidity of neck muscles and tenderness of neck and spinal column; eyes negative; reflexes present; very restless, talking and crying incessantly, convulsions about every thirty minutes, twitching of extremities; died at 2 P.M., April 26, 1898. Post mortem showed a small amount of pus under pia mater along course of larger vessels.

Case 22.—Male, aged 24, admitted May 24, 1898, in a comatose condition, head retracted, *taché cerebrale*, pupils unequal; previous history, as far as it could be obtained, that of cerebrospinal meningitis of the epidemic form; died about one-half hour after admission.



Case 15.—Cerebrospinal meningitis. Death.

Case 23.—Male aged 3 years, 7 months; seen March, 1898; taken sick with earache and fever; throat red; examination of secretion showed presence of diplococci; about four days later showed symptoms of meningitis, vomiting, headache, retraction of head, unequal pupils; about same time developed a croupous pneumonia accompanied by a serous exudate in pleural cavity, which showed pneumococci; purulent discharge from ear; death on nineteenth day of disease.

Case 24.—Female, aged 1 year, 6 months; seen April, 1898; taken sick suddenly with vomiting, retraction of head; *taché cerebrale;* tenderness along spine; abdomen boat-shaped; high irregular temperature, delirium, coma and death.

Case 25.—Female, aged 5, sister of above; taken sick about same time, with symptoms of typhoid fever which were soon followed by the characteristic symptoms of cerebrospinal fever; during its course pus was discharged from ear, containing diplococci; died within an hour of her sister.

Case 26.—Female, aged six months, admitted April 3, 1898; badly developed; rickety; taken sick suddenly, April 2, with convulsions, followed by vomiting; retraction of the head; tenderness along spinal column; *taché cerebrale*; pupils contracted; gradually became comatose, convulsions brought on by the slightest touch; death April 13, 1898.

(To be continued.)

Let us have a Department of Public Health!

SUBMUCOUS FIBROID; FIBROID UTERUS; CURETTEMENT AND ANTERIOR FIXATION.*

BY E. E. MONTGOMERY, M.D.

Professor of Gynecology, Jefferson Medical College; Gynecologist to St. Joseph's and Jefferson Hospitals; Ex-President of the Pennsylvania State Medical and Philadelphia Obstetrical Societies.

PHILADELPHIA, PA.

Submucous fibroid.—One week ago I brought this patient before you, and removed a fibroid growth which had been extruded from the cavity of the uterus into the vagina. This condition is recognized as submucous fibroid, or submucous polypus. The tumor, hung by a pedicle, was very easily twisted off; but the principal difficulty was in the subsequent removal of the tumor. The patient has done well; there has been no abnormal range of temperature, and her condition is excellent. She sits up to day. Such growths are not unfrequently a source of considerable difficulty in diagnosis. Thus, where the pedicle, or a portion of the tumor is closely constricted by the uterus and sloughing or gangrene of a portion of the tumor results, which causes very profuse discharge, not infrequently hemorrhages, the physician, unless careful in making examination, is led to believe that a malignant disease exists. The digital examination, however, is usually sufficient to disclose the fact that the carious or necrotic tissue is only the lower portion of the tumor, while the upper part will be smooth, which is not characteristic of malignant disease.

Fibroid uterus.—I bring before you another patient with a pelvic growth of a different class. She is 34 years of age and married. Her father is living, and in good health at 82 years of age. Her mother died during confinement, when the patient was 2 years of age, and one sister died at 42. She had scrofula when young, but the immediate cause of her death was some abdominal trouble. There are two brothers and two sisters living, in good health. The patient has had measles, mumps and scarlet fever during her childhood, diphtheria at the age of 14, from all which she made a good recovery. Puberty occurred at the age of 12, the menstrual function being normal until her present trouble. She was married at 25, but has never been pregnant. Six years ago she had an attack of grippe, which lasted her nine weeks, and during it she had attacks of severe pain in the region of the left ovary, and profuse vaginal discharge. Her family physician asserted that the left ovary was enlarged to the size of a walnut. The patient has had other attacks which have ceased under treatment, since which she has enjoyed excellent health and been free from pain, until two years ago; then she fell backward from a step-ladder and struck her back over the sacrum. Following this injury she suffered from dysmenorrhea, and first noticed an amount of blood at the menstrual periods slightly in excess of that lost in previous years. During the last year she has grown steadily worse, menorrhagia increasing, becoming almost uncontrollable, associated with nausea and vomiting, which required her to remain in bed two or three days out of a month. She has even resorted to opiates to be free from the pain. She is free from pain during her intermenstrual period. The discharge is not offensive, the patient is well nourished, and has not lost flesh. She has no trouble with micturition, appetite is good, bowels regular, tongue clean, heart and lungs normal. The urine has an acid reaction, contains neither albumin nor sugar, has a specific gravity of 1021, and shows two grains of urea to each ounce. During the time she has been in the house she has menstruated profusely, pain is quite severe, but not so severe as she has often experienced. She has not required the use of opiates since her entrance.

This patient presents a history of having undergone an injury two years ago, subsequent to which there was an attack of dysmenorrhea, the occurrence of increased menstrual flow, amounting at times to hemorrhage. During this time, there has been an enlargement of the abdomen, and upon examination we find a mass which extends to the umbilicus, situated in the median line, not very regular in outline, presenting a number of nodules. By vaginal or conjoined examination we find the mass extends into the pelvis behind the uterus. That it is continuous with that organ above is evident from the fact that pressure on the mass above causes movement in the one below. It is firm, hard, resistant, and presents not the slightest sign of elasticity or fluctuation. Movement of the mass above with the hand upon the abdomen moves the cervix, which is pushed forward.

You will ask, what is the growth that causes such symptoms? In arriving at a diagnosis it is important to keep before you a careful synopsis of the various conditions which might possibly cause such symptoms, otherwise we may overlook the existence of certain signs which, if recognized, would afford us information as to the diagnosis and appropriate course of treatment. In summing up, then, the conditions which have produced the symptoms present, we must remember the organs in that part of the body in which this tumor is found, and which necessarily afford the source from which it has originated. It is true that other organs, from increased weight, may gravitate into the pelvis. A very large liver may so stretch its attachments as to extend into the pelvis. A kidney that becomes large or from insufficient attachment becomes known as a floating kidney, may be situated at the bottom of the pelvis. Intestinal tumors, as sarcoma or an omental tumor, may occupy this situation. We have to consider the organs that are in the pelvis, the uterus, ovaries, tubes, rectum, and the possibility of growths from the retrouterine or retroperitoneal tissue. We should not forget the possibility of the patient suffering from an accumulation of fecal matter, as that not unfrequently is a cause of error in diagnosis and has led to operation, when a dose of castor-oil would have been sufficient to have entirely removed it, and rendered the diagnosis certain. In this patient, the tumor is situated in the pelvis and extends upward. If it were the liver we would find a line of dulness continuous from a point above and downward toward the pelvis. On the contrary, the line does not extend above the umbilicus and we are able to indefinitely outline the upper part of this mass. Further, then, we are unable to trace any outline of the fundus of the uterus with the finger in the vagina and the hand over the abdomen. Again, we find the cervix passes directly into the mass. The cervix does not lie to one side of it, but is pushed forward up against the pubic bone and the continuation of the mass with the cervix demonstrates that the tumor is uterine in its origin.

* A clinical lecture delivered at the Jefferson Medical College.

In the possibility of uterine tumor we have to consider various forms; thus, fibroid growths, sarcoma or carcinoma of the uterus. The cervix in the great majority of cases is the seat of malignant disease, which forms either as epithelioma, carcinoma, a hard, resisting mass, or which may later, through proliferation, break down as an ulceration upon the cervix. Again, malignant disease may begin in the cervical canal or cavity of the uterus, but carcinoma or sarcoma is exceedingly rare. In carcinoma or epithelioma we do not have marked enlargement of the uterus. The body in such cases remains small. In sarcoma the uterus becomes large, but does not attain to the size of the organ of this patient, without more or less breaking down: it does not present the firm resisting character to be felt in this growth, so we are brought to the consideration of the fact that we here have a condition of the uterus known as fibroid degeneration or fibroid growth of the uterus. A week ago I told you we had different varieties of fibroid growth according to the situation. Thus, one found in the cavity of the uterus, covered with mucous membrane, becomes known as a submucous fibroid; when situated equally distant from the internal and the external wall, involving the wall of the organ, it becomes known as mural or interstitial fibroid; others situated near the external layer, as they increase in size are pushed out of the wall beneath the peritoneum, and are known as extramural fibroids, also called subperitoneal. Tumors are also named according to the relation of the uterus. It may be extruded from the uterus, hanging by a pedicle, known as a polypus. The term "polypus" is used more particularly with reference to those which are extruded into the cavity of the organ, while those situated in the external surface are known as pedunculated subserous fibroids.

In preparing this patient for operation we have the parts thoroughly cleansed, not only on the external surface through which the incision will be made into the abdomen, but the vulva and vagina as well. The latter is scrubbed thoroughly with tincture of green soap and creolin, irrigated with sterile water, and finally washed with alcohol. One purpose in doing this is that more than likely in the removal of the growth it may be necessary to enter the vagina, and we prefer to have it thoroughly cleansed so as to prevent the possibility of infection being derived from it. The operation will consist in the removal of the entire tumor, possibly including the greater, or entire part of the uterus.

Making an incision through the abdominal wall, we are careful to secure the bleeding vessels before we enter the peritoneal cavity. The vessels here are larger, owing to the presence of the pelvis, the abdominal vessels becoming more distended. This gives rise to more bleeding than in ordinary conditions. We pick up the peritoneum and cut it between forceps so as to avoid the possibility of injuring a knuckle of intestine situated in front. Such a knuckle of intestine would be very readily injured or possibly omentum incised, requiring additional time to suture it and secure bleeding vessels. Having cut through the peritoneum I introduce my finger to examine the tumor, which is found quite firmly fixed. There have been attacks of inflammation which have bound this tumor down and made it more difficult to accomplish its removal. As a preliminary step I enlarge the wound upward so as to give more room, and a number of sponges are introduced to hold back the intestines. In these operations it is sometimes difficult to release the tumor from its bed; the tumor impacted in the pelvis, suction is very marked. This tumor is found difficult to raise. I expedite this a little by splitting through the anterior wall and pushing back the envelope. We in this way practically accomplish partial enucleation of the tumor. It is easier to do this than to separate the firm adhesions to its capsule. I still further enucleate the mass and cut smaller masses out, reducing the size of the mass until we are better able to get around it. Such tumors from pressure in the pelvis not unfrequently become molded to the surface, and you see one which I am now withdrawing, which has been flattened out from its pressure upon the tumor in front of it. We find a cyst of the left tube, which is probably the tube and ovary—you remember the patient gave a history of having pain on that side.

These are the cases that try men's souls. Everything is matted together and we have to work down carefully, knowing there are important vessels which may be injured. As the tumor is fairly well fixed posteriorly, I cut through the peritoneum in front and push off the bladder, then sutures are introduced laterally to secure the uterine and ovarian arteries, after which we can proceed with our dissection, making sure that we have the mass removed. Very frequently we find the appendix is firmly adherent to it, as in this patient, when I tie it off. This enables us to bring up the fibroid growth which is situated below in the pelvis. We have in this patient to be very particular as to the relation of the parts, for everything is displaced. I am here pulling up a structure which is the round ligament or the ureter, I am uncertain which. Exploring it and the direction which it takes, we find it is the round ligament, considerably larger than usual. If we always had a round ligament the size of this, there would be no difficulty in securing the uterus forward by using it as a support. We now pass the ligature deeply at the side of the uterus to secure the uterine artery. As this ligature is tied, I ask my assistant to take off forceps on this side, which shows that the bleeding vessel has been secured. A ligature is placed on the other side of the stump in a similar manner. It is an important consideration in this case to completely secure hemostasis so that important vessels will not continue to bleed. Knowing where these vesssels come off, we are enabled to pass our ligatures, surround them, and cut off the supply. In some cases, the better plan of procedure instead, would be to ligate en masse or ligate the internal iliac arteries. When the latter is done, it will be found that the bleeding is controlled in the pelvis; pads are now removed and the cavity thoroughly irrigated. There is a tumor situated on the right side, which we enucleate, removing the corresponding tube. A portion of the tumor is filled with blood from the sac that is left. Proceeding further we count the sponges.

Hot water has an excellent effect as a styptic, causes the vessels to contract, and is a good stimulant to the patient. We use for the purpose a normal salt solution, because if we use simply hot water it will cause the epithelial covering of the peritoneum to swell up and render it unfit for the absorption from the peritoneum later. Now we place a hot towel over the intestines to keep them from being exposed, place the patient in the Trendelenburg posture and use an electric light. Thus we can thoroughly examine the cavity. Having examined and found that hemor-

rhage is well controlled we proceed to suture the peritoneum over the stump, shutting it out from the general peritoneal cavity. This is done by a continuous catgut suture, beginning on one side of the pelvis and suturing the peritoneum across the stump to the other side. These sutures are introduced in such a way as to make pressure upon the end of the stump and thus secure additional hemostasis. The procedure is a somewhat tedious part of the work, but very important. We bring these surfaces together, for upon securing the control of the hemorrhage the favorable result very much depends. I again irrigate with normal salt solution, leaving a considerable portion of it remaining in the abdominal cavity. The wound is closed with a figure-8 stitch, by which the abdominal wall and the aponeurosis are brought in apposition, and the ends brought out through the skin and superficial fascia, so that they have all the advantage of the mattress suture, with the ability to remove it. I am particular in introducing this suture that it picks up the aponeurosis and brings it well over the muscle, so that we will have a good firm ventrum, otherwise the patient will likely suffer from ventral hernia. The sutures are introduced about half an inch apart.

Curettement and anterior fixation.—This patient is 35 years of age. Her mother died of typhoid fever at 31 and her father at 36. She has lost one brother from scarlet fever, while other members of the family enjoy good health. She had measles and pertussis during infancy. Puberty occurred at the age of 12 The cervix and perineum have been torn and subsequently repaired. Fifteen months after her labor she had a miscarriage at two months. Seven years ago she had a miscarriage at four months, after which pregnancy has not recurred. Menstruation is regular, leucorrheal discharge marked at times, but her general health has been good. She has had aching pain in the sacral region and lower part of the abdomen. This pain now precedes and follows menstruation. The establishment of the flow ceases to alleviate the suffering; headache is almost constant. Six months ago she was confined to bed from nervous prostration induced by uterine trouble. The symptoms now are much aggravated, and she suffers from constant distress, which has led to convulsions. These convulsions are likely to occur at the menstrual period. On examination we find the uterus retroflexed, and there is considerable metritis.

I shall dilate the uterus by bougies. In introducing the first one it must be carefully accomplished to see that it passes in the proper direction; the instruments as you notice pass backward. Having accomplished the dilatation we curette the cavity, going over the lining membrane in different directions to make sure it is completely scraped, using a flush curette so the fluid will wash away the débris as the operation proceeds. Curettement is followed by packing the cavity with iodoform gauze. It serves as a drain, keeps the surfaces separated, promotes the throwing out of plastic material and sealing up of the abraded surfaces. An incision is made in the lower part of the abdomen, through which to raise up the uterus and draw it forward. A short incision is employed. Old adhesions binding down the uterus posteriorly are broken up, and the fundus seized. A fine silk thread suture is passed through the peritoneum on one side through the fundus of the uterus and brought out through the peritoneum on the opposite side. This is to form a peritoneal band which will permit the mobility of the uterus and yet will restrain it from falling backward. The wound is closed with a figure-8 suture.

DERMATOLOGIC DIFFICULTIES.*

BY L. DUNCAN BULKLEY, A.M., M.D.

Attending Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital, etc.

NEW YORK CITY.

The difficulties of dermatology are thought by many to be very great. Apparently the general practitioner often regards the whole subject as almost hopeless, and is frequently content with a very limited consideration of diseases of the skin. The difficulties in the way of mastering completely all the possibilities of dermatology are indeed not light, and even the most experienced will often find trouble in diagnosis and disappointment in treatment. To attempt to point out all dermatologic difficulties would be to produce a textbook on diseases of the skin, so no attempt will be here made to cover all the ground; but it may not be without advantage to direct attention to a few of the points where special difficulties occur, and to make a few practical suggestions in regard to overcoming them. We may briefly consider them under the heads of diagnosis, prognosis and treatment.

Diagnosis.—While in a certain proportion of cases it is relatively easy to make a correct diagnosis, to one who has any knowledge of this class of diseases, it must be acknowledged that in a considerable proportion of cases there must always be some doubt, until analytic reasoning has established the exact nature of the case. As correctness in diagnosis is the first essential of successful treatment, in diseases of the skin, almost more than in other branches of medicine, a little thought may be given to this dermatologic difficulty.

1. The examination should be made in the most complete and thorough manner possible: no hasty or superficial glance will enable even the skilled observer to arrive at a positive diagnosis. The practitioner should never be satisfied with inspecting only a portion of the eruption present, but he must insist upon examining the whole of the diseased surface; and it is also important to examine the neighboring healthy skin as well.

2. To observe diseases of the skin satisfactorily it is necessary that there should be good light; for this purpose daylight is almost essential, and plenty of it, preferably from a northern exposure. It is almost impossible to judge correctly of the color of skin lesions by artificial light. A good lens, about two inches in diameter, is often of great assistance in bringing out clearly the separate features of an eruption. The microscope should always be used in doubtful cases of the vegetable parasitic eruptions.

3. Care and patience must be exercised, in very many cases, in analyzing the elements of the eruption and determining exactly the disease to which they belong and the indications present for treatment. In making the diagnosis of an eruption there are two methods by which the end can be arrived at; these should be employed together, in order to obtain any absolute accuracy. The first is by recognizing the actual characters or features of the disease present,

* Presented to the Section on Cutaneous Medicine and Surgery, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

In the possibility of uterine tumor we have to consider various forms; thus, fibroid growths, sarcoma or carcinoma of the uterus. The cervix in the great majority of cases is the seat of malignant disease, which forms either as epithelioma, carcinoma, a hard, resisting mass, or which may later, through proliferation, break down as an ulceration upon the cervix. Again, malignant disease may begin in the cervical canal or cavity of the uterus, but carcinoma or sarcoma is exceedingly rare. In carcinoma or epithelioma we do not have marked enlargement of the uterus. The body in such cases remains small. In sarcoma the uterus becomes large, but does not attain to the size of the organ of this patient, without more or less breaking down; it does not present the firm resisting character to be felt in this growth, so we are brought to the consideration of the fact that we here have a condition of the uterus known as fibroid degeneration or fibroid growth of the uterus. A week ago I told you we had different varieties of fibroid growth according to the situation. Thus, one found in the cavity of the uterus, covered with mucous membrane, becomes known as a submucous fibroid; when situated equally distant from the internal and the external wall, involving the wall of the organ, it becomes known as mural or interstitial fibroid; others situated near the external layer, as they increase in size are pushed out of the wall beneath the peritoneum, and are known as extramural fibroids, also called subperitoneal. Tumors are also named according to the relation of the uterus. It may be extruded from the uterus, hanging by a pedicle, known as a polypus. The term "polypus" is used more particularly with reference to those which are extruded into the cavity of the organ, while those situated in the external surface are known as pedunculated subserous fibroids.

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rhage is well controlled we proceed to suture the peritoneum over the stump, shutting it out from the general peritoneal cavity. This is done by a continuous catgut suture, beginning on one side of the pelvis and suturing the peritoneum across the stump to the other side. These sutures are introduced in such a way as to make pressure upon the end of the stump and thus secure additional hemostasis. The procedure is a somewhat tedious part of the work, but very important. We bring these surfaces together, for upon securing the control of the hemorrhage the favorable result very much depends. I again irrigate with normal salt solution, leaving a considerable portion of it remaining in the abdominal cavity. The wound is closed with a figure-8 stitch, by which the abdominal wall and the aponeurosis are brought in apposition, and the ends brought out through the skin and superficial fascia, so that they have all the advantage of the mattress suture, with the ability to remove it. I am particular in introducing this suture that it picks up the aponeurosis and brings it well over the muscle, so that we will have a good firm ventrum, otherwise the patient will likely suffer from ventral hernia. The sutures are introduced about half an inch apart.

Curettement and anterior fixation.—This patient is 35 years of age. Her mother died of typhoid fever at 31 and her father at 36. She has lost one brother from scarlet fever, while other members of the family enjoy good health. She had measles and pertussis during infancy. Puberty occurred at the age of 12 The cervix and perineum have been torn and subsequently repaired. Fifteen months after her labor she had a miscarriage at two months. Seven years ago she had a miscarriage at four months, after which pregnancy has not recurred. Menstruation is regular, leucorrheal discharge marked at times, but her general health has been good. She has had aching pain in the sacral region and lower part of the abdomen. This pain now precedes and follows menstruation. The establishment of the flow ceases to alleviate the suffering; headache is almost constant. Six months ago she was confined to bed from nervous prostration induced by uterine trouble. The symptoms now are much aggravated, and she suffers from constant distress, which has led to convulsions. These convulsions are likely to occur at the menstrual period. On examination we find the uterus retroflexed, and there is considerable metritis.

I shall dilate the uterus by bougies. In introducing the first one it must be carefully accomplished to see that it passes in the proper direction; the instruments as you notice pass backward. Having accomplished the dilatation we curette the cavity, going over the lining membrane in different directions to make sure it is completely scraped, using a flush curette so the fluid will wash away the débris as the operation proceeds. Curettement is followed by packing the cavity with iodoform gauze. It serves as a drain, keeps the surfaces separated, promotes the throwing out of plastic material and sealing up of the abraded surfaces. An incision is made in the lower part of the abdomen, through which to raise up the uterus and draw it forward. A short incision is employed. Old adhesions binding down the uterus posteriorly are broken up, and the fundus seized. A fine silk thread suture is passed through the peritoneum on one side through the fundus of the uterus and brought out through the peritoneum on the opposite side. This is to form a peritoneal band which will permit the mobility of the uterus and yet will restrain it from falling backward. The wound is closed with a figure-8 suture.

DERMATOLOGIC DIFFICULTIES.*

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The difficulties of dermatology are thought by many to be very great. Apparently the general practitioner often regards the whole subject as almost hopeless, and is frequently content with a very limited consideration of diseases of the skin. The difficulties in the way of mastering completely all the possibilities of dermatology are indeed not light, and even the most experienced will often find trouble in diagnosis and disappointment in treatment. To attempt to point out all dermatologic difficulties would be to produce a textbook on diseases of the skin, so no attempt will be here made to cover all the ground; but it may not be without advantage to direct attention to a few of the points where special difficulties occur, and to make a few practical suggestions in regard to overcoming them. We may briefly consider them under the heads of diagnosis, prognosis and treatment.

Diagnosis.—While in a certain proportion of cases it is relatively easy to make a correct diagnosis, to one who has any knowledge of this class of diseases, it must be acknowledged that in a considerable proportion of cases there must always be some doubt, until analytic reasoning has established the exact nature of the case. As correctness in diagnosis is the first essential of successful treatment, in diseases of the skin, almost more than in other branches of medicine, a little thought may be given to this dermatologic difficulty.

1. The examination should be made in the most complete and thorough manner possible: no hasty or superficial glance will enable even the skilled observer to arrive at a positive diagnosis. The practitioner should never be satisfied with inspecting only a portion of the eruption present, but he must insist upon examining the whole of the diseased surface; and it is also important to examine the neighboring healthy skin as well.

2. To observe diseases of the skin satisfactorily it is necessary that there should be good light; for this purpose daylight is almost essential, and plenty of it, preferably from a northern exposure. It is almost impossible to judge correctly of the color of skin lesions by artificial light. A good lens, about two inches in diameter, is often of great assistance in bringing out clearly the separate features of an eruption. The microscope should always be used in doubtful cases of the vegetable parasitic eruptions.

3. Care and patience must be exercised, in very many cases, in analyzing the elements of the eruption and determining exactly the disease to which they belong and the indications present for treatment. In making the diagnosis of an eruption there are two methods by which the end can be arrived at; these should be employed together, in order to obtain any absolute accuracy. The first is by recognizing the actual characters or features of the disease present,

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and their likeness to a well-known lesion or malady of the skin; the second is by *exclusion*, namely, by considering other eruptions which the one present might be mistaken for, and excluding each in turn, by the absence of some particular, distinctive feature belonging to it. Both methods must be employed where the case is at all doubtful; indeed, even with the expert, this process of mental logic is more or less employed in every case.

In studying an eruption it is well to observe and note carefully the distribution of the lesions, for, as is well known, different affections have especial seats of predilection and different modes of development and arrangement of their elements. Thus, eczema is prone to attack the flexures, while psoriasis, ichthyosis and lichen are found by preference on the extensor surfaces. The several peculiar locations of the lesions of scabies, on the interdigital spaces, elbows, anterior fold of the axillæ, buttocks, and genital region, are very striking. Other eruptions appear on some of these localities, but the concurrence on them all would point to scabies. Many other illustrations will occur to everyone, which need not be detailed here.

Time and space would fail in any attempt to present the difficulties which may sometimes occur in connection with the diagnosis of special diseases of the skin, or certain stages or phases of eruption; each one at times may be fairly easy or at times may present great difficulty. But if the habit of careful scrutiny of all the eruption be acquired, together with a painstaking investigation and record of the history, and study and analysis of each case, very much of the difficulty will vanish. But it must, however, be acknowledged that cases do arise and conditions develop on the skin which may at times baffle even the most skilled.

Prognosis.—This is always an important element to consider, and one which the patient has a right to be peculiarly interested in and anxious about; and yet it is one about which the gravest difficulties often arise. Diseases of the skin are proverbially rebellious, and a guarded diagnosis is always in order. But, on the other hand, it is very desirable if we can rightly give assurance of relief and cure, and the element of time is always an important one in the mind of the patient. Here so much depends upon exact diagnosis and correct and faithful treatment that it is very difficult indeed to be exact. Many general diseases have more or less fixed periods of duration, under favorable circumstances, and we can predict the probable duration of pneumonia, typhoid fever, an acute attack of gout, and the like, with tolerable definiteness.

With many diseases of the skin it is quite different; even under the best of circumstances the progress may be slow, and, unfortunately in many instances, somewhat uncertain. Moreover, there is very little tendency in most diseases of the skin to recover spontaneously; it is all up-hill work, while some have the tendency to recur with the slightest provocation, and often indeed without any apparent cause. Some of the greatest difficulties in dermatology are, therefore, often connected with prognosis. Moreover, some of the difficulties are increased by the semi-quack publications of drug houses, to say nothing of the blatant advertisements of the daily press, which would lead the ignorant and uninitiated to believe that the single use of this or that remedy was all that was needed to cure the most rebellious of skin diseases.

Treatment.—The subject of the treatment of diseases of the skin is a very broad one, but its difficulties lessen in proportion to the broadness of mind of the practitioner. If the question simply is asked, "What is good for this or that disease of the skin," but little real good will result. Some prescription or remedy may be suggested, which according to the knowledge or experience of the suggestor, may possibly be of service in some particular case—more commonly it is of little real or permanent benefit. But if, with broad medical knowledge and experience, the disease and the particular case are studied in all their aspects, therapeutic suggestions will arise and measures will suggest themselves in quite a different manner, and far more favorable results will follow.

It will help to overcome some of the difficulties in practice to remember certain facts regarding diseases of the skin and their treatment.

1. The skin is a great secreting organ, very closely connected with the functions of the rest of the economy, and one whose vitality and integrity depend greatly on the condition of the rest of the system.

2. There is nothing intrinsically strange or curious in diseases of the skin; the same pathologic processes which occur elsewhere in the body take place on the skin. While the diseases may at times assume strange and even *bizarre* forms, they are due to the operation of fixed pathologic laws or processes, which are to be met in more or less the same manner as when occurring elsewhere.

3. There is no specific for diseases of the skin. While arsenic is of some value in some diseases or conditions, its range of action is limited, and it is far from being a cure-all for this class of affections.

As corollaries to these may be mentioned:

1. In order to secure the best results in diseases of the skin, the health and vitality of the individual, as well as of the skin itself, must be put in the best condition possible.

2. Learning by careful study the pathologic changes which have occurred, they are to be treated on principles suited for the condition. Treatment is to be guided in this manner, rather than by any fixed plan, dependent upon the name which has been given to the particular group of lesions present.

3. Avoid seeking for specifics for particular diseases of the skin, and apply broad medical principles in therapeutics. Treat each case on its own basis, seeking for the remedies, local or general, suited to the condition present.

The greatest errors which occur are generally on the side of overstimulation. The tender and delicate structure of the skin is ever to be borne in mind; most of the diseases of the skin are of an inflammatory or congestive character, and the difficulty is often in securing measures which shall combat this successfully. Even in pruritic states of the skin, irritating and stimulating measures are often wrongly used, when soothing remedies, calculated to allay the excited nerve elements, are rather indicated. With all care and thought, however, it must be admitted that the treatment of some cases of disease of the skin presents great difficulties, and in few branches of medicine are more patience and deeper thought required than in the one under consideration. But the difficulties of dermatology are not insurmountable. Vast strides have been made in the past quarter-century, both on the recognition and clear differentiation of separate diseases, and in the knowledge of their path-

ology and natural history, and with these, also advance in their treatment. The difficulties connected with this branch can not be overcome in a moment, but with patience and hard work every one can accomplish very much toward solving many of them. The days of hasty and careless diagnosis, and of routine treatment are, or should be, past; arsenic and zinc ointment do not represent the science of the dermatology of to-day.

In conclusion it may be stated that many of the difficulties ordinarily experienced in dermatology, are the result of the relative neglect which this branch has heretofore received at the hands of the general profession, and the relatively little attention often paid to these cases in practice. With sufficient study and thought on individual cases, many of them will appear less formidable and disappear.

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MUCOCELE OF THE ETHMOIDAL CELLS SIMULATING AN ORBITAL TUMOR.

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If, in the course of an inflammation of the ethmoidal cells, the secretions can not be discharged into the nasal cavity because the natural outlets are blocked up, the imprisoned fluid will after a while begin to exert considerable pressure upon the bony walls and cause them to expand. The very thin orbital wall of these cells is especially apt to yield to this high pressure and to form a round, slowly-growing tumor behind the inner canthus of the eyelids, which causes more or less marked displacement of the eyeball. In some of these cases the cystoid nature of the tumefaction was readily revealed by fluctuation; but in some instances the tumor appeared so firm and hard that in the absence of fluctuation it was mistaken for a solid neoplasm and preparations were made for its extirpation. An exploratory incision into the exposed tumor of course revealed its true nature. In the treatment of these cases the chief object should be to establish a free communication of the ethmoidal space with the nasal cavity, which is best accomplished by breaking down the nasal partition at the lowest point of the ethmoidal space, and inserting a drainage-tube for a few weeks.

Judging by the very few cases on record, ethmoidal mucocele protruding into the orbit seems to be a rather rare occurrence; and therefore the report of an additional case—the only one I have observed in twenty-five years—may not be without interest to the readers of the JOURNAL.

On July 25, 1898, a girl, 13 years old, was brought to my office on account of a very strange appearance of her left eye. Four years previously she had met with an accident by which the bones at the root of the nose were fractured. Since that time she had been troubled with nasal catarrh, and the inner canthus of the left eye was drawn down so that the palpebral fissure had a decidedly oblique direction, as in the Mongolian race. During the past year her parents noticed her left eye to "bulge" and the skin of the upper lid to become at times red, swollen and painful.

I found the left eyeball slightly protruding and markedly displaced to the temporal side of the orbit, but its mobility was not impaired in any direction; the vision was normal; there was no diplopia, and the fundus showed normal conditions. The displacement of the globe was evidently caused by a tumor which seemed to proceed from, and to be continuous with, the inner wall of the orbit. Upon palpatation the tumor appeared smooth, round and firm, but upon deep pressure through the upper lid undoubted evidence of fluctuation could be obtained. The tumor reached downward to a little below the palpebral ligament, where its boundary was marked by a sharp, ragged ridge of bone; its upper contour was lost behind the supraorbital margin.

The patient was admitted to the Presbyterian Hospital on July 27, and the following operation performed under ether anesthesia: An incision was made extending from that bony ridge at the root of the nose to the middle of the brow; the orbicularis muscle and subjacent connective tissue were liberally dissected up so that the wound edges could be well retracted and the surface of the tumor exposed. An exploratory incision into the most prominent part of the tumor drew a creamy fluid of a stale odor; the incision was at once enlarged, and I found that the ethmoidal cells had been converted into one large cavity, from which at least four ounces of the creamy emulsion were withdrawn with a syringe. In exploring the cavity it was found to extend one inch directly inward and two inches downward; no carious or necrosed bones were detected. The part of the cyst wall which protruded into the orbit and consisted of a rigid membrane, like thin cardboard, was excised with scissors. Then passing a bone curette toward the most dependent part of the cavity, I there broke down the thin osseous partition to establish a free communication with the nasal cavity, and inserted a drainage-tube, and after thorough irrigations with boric acid the upper part of the wound was closed by sutures, and a dressing applied.

The after-treatment consisted in daily irrigation with boric acid; under this treatment the discharge rapidly disappeared and the wound was gradually filled up with granulation tissue. After two weeks the drainage-tube could be left out; and four weeks after the operation the wound was completely healed and the protrusion and displacement of the eyeball had entirely disappeared.

LUMBAR NEPHROPEXY WITHOUT SUTURING, WITH REPORT OF CASE.

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Since N. Senn devised and described this method of treatment for movable kidney a year ago, the operation has been performed frequently by different surgeons, and it will undoubtedly soon assume its proper place in operative surgery, that is, it will supplant an irrational technic. The old method of fixing a movable kidney in its normal location by passing sutures through the glandular structure of such a delicate, as well as vital organ as the kidney, should be emphatically condemned. Sutures which are tied sufficiently firm to suspend a kidney must, through subsequent cicatricial contraction, destroy a considerable amount of kidney tissue. If such sutures remained *in situ*, it would be far better than what actually takes place in

the great majority of such cases, that is, cutting through of the sutures. This was well illustrated *in vivo* in a case upon which I recently did a nephrotomy. I passed two sutures through the kidney capsule and a small portion of the cortical layer, to act as guy-ropes in steadying the organ. I made very slight traction and was very much surprised at the extreme friability of the kidney, although normal in structure. Even such slight force was sufficient to cause the suture to cut through. Consider the force brought to bear upon the sutures after nephrorrhaphy; the continued downward rhythmic movement of the diaphragm; occasional straining and coughing, and the weight of the kidney itself; and then the doubtful efficacy of nephrorrhaphy, as demonstrated by abundant clinical observation, is not without reason. Even Hahn, the originator of kidney fixation, advised opening of the capsule and stitching it to the parietal wall; while Tuffier, still more radically inclined, advocated that the capsule be extensively stripped from the kidney in order to obtain a large granulation surface.

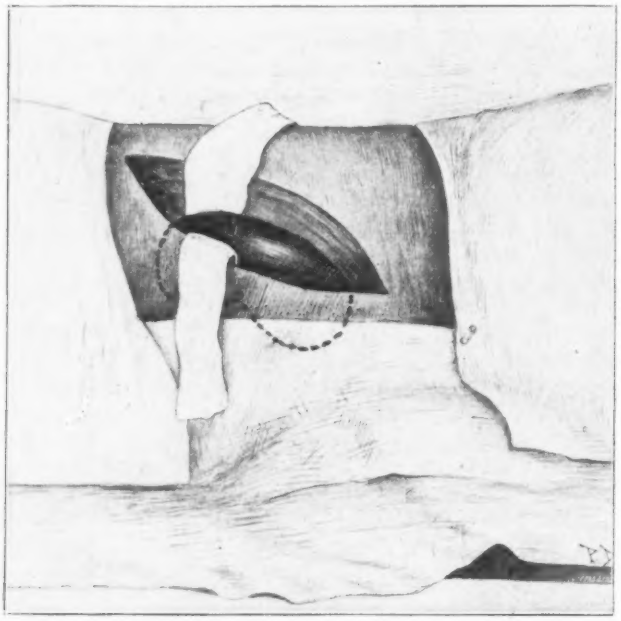

Fig. 1.—Gauze sling *in situ*.

This procedure should be condemned for several reasons: 1, the protective envelope of the kidney is destroyed; 2, union is extravasated between pararenal connective tissue of low origin, characterized by great intrinsic proliferative power, with the highly complex parenchyma of the kidney—a tissue very deficient as regards regeneration. Again, may not some of the renal ganglia be destroyed? At least this branch of anatomy is yet in the dark, and until more light is thrown on the subject, the surgeon must be guarded and not destroy or injure a nervous mechanism, which may cause reflex neurosis. This is well shown from the fact that often a most violent nephralgia of long standing succumbs to a simple splitting of the kidney capsule. The following case recently came under my observation, and I had an opportunity to perform nephropexy by this unique method.

Mrs. R., aged 40 years, married, has one child, 16 years of age. Since the birth of this first and only child she has had three miscarriages. At the time of confinement, the patient was obliged to remain in bed several weeks, presumably on account of a metritis following infection at the time of delivery. The patient was considerably reduced in flesh and of a very nervous temperament; complained of pain in the hypogastric and dorsal regions; also of loss of appetite and indigestion; no vomiting. Examination by bimanual manipulation, according to the method of Israel, revealed a movable kidney of the left side. In the erect position the organ would descend into the pelvis. The ovaries were normal, uterus slightly retroverted, with a scanty discharge. I curetted the uterus, then placed it in proper position and held it there by means of a pessary. I also ordered an abdominal bandage, with a kidney pad. No benefit resulted from this treatment, and the patient was admitted into St. Joseph's Hospital, Nov. 4, 1898, for operation. She was placed on the left side upon a narrow cushion, in order to fully expose the right lumbar region. An incision was made at the outer border of the quadratus lumborum muscle, extending from the twelfth rib to near the crest of the ilium. After all the succeeding structures were divided, the adipose capsule was reached and opened. An assistant was instructed to place his fist in the hypochondriac region in order to push up the kidney; but this procedure was unsuccessful, no kidney being palpable. It was only by raising the chest of the patient, who had been lying in a recumbent position, that the kidney presented itself beneath the twelfth rib. It was seized with a forceps and the fatty capsule removed with dissecting forceps and scissors. The fibrous capsule was next thoroughly scarified with two cambric needles held in hemostatic forceps.

Fig. 2.—Sling tied over pad. Operation completed.

The scarification was carried to a degree just short of causing hemorrhage. A strip of iodoform gauze, twelve inches long and two inches wide was then carried underneath the lower pole of the kidney. A gauze pad was placed over the portion of the kidney exposed and the gauze sling tied over it. The region beneath the kidney was firmly packed with a gauze tampon, thus forming a barrier which would preclude any possibility of descent of the kidney. The external wound was not sutured. Two secondary sutures were placed in the upper angle of the wound. A pad, consisting of a folded towel, was placed in the hypochondriac region, which further reinforced the gauze packing. This was incorporated in a bandage which passed around the waist and held the dressings in place.

The first dressing took place three days later, when the two secondary sutures were tied. The packing beneath the kidney was removed six days after operation and revealed a mass of healthy granulations. Five days later the gauze sling was removed, showing the kidney buried in granulations. The external wound was drawn together by means of adhesive strips. The patient progressed in a most excellent manner as far as the wound was concerned. The operation caused a temporary augmentation of her nervous condition. However, rest in bed, with the Weir Mitchell treatment, caused a wonderful improvement. The patient was kept in bed for a month, not on account of the operation, but for her nervous condition. She was then allowed to walk about the hospital, with a kidney pad, and two weeks later was discharged, greatly increased

in weight, and in excellent health in every respect. I have lately seen her, and upon examination found the kidney in its normal location, lying upon a firm bed of cicatricial tissue. Her general health is better than in years, and the rapid increase in weight has made it impossible to wear the same clothes which she wore before the operation.

This method of kidney fixation is founded upon a rational basis, and if properly performed, and the patient kept in the recumbent position until perfect cicatrization has taken place throughout the wound, a relapse is an impossibility, as the kidney is not only suspended by a band of cicatricial tissue, but lies firmly bound upon a floor of connective tissue.

I would offer the following conclusions in recommendation of this operation:

1. An extrarenal support for the kidney is obtained.
2. This support is formed by a union of the fibrous capsule of the kidney with the pararenal connective tissue; hence, no interference with the kidney itself.
3. The gauze sling draws the lower pole of the kidney in an outward direction, placing the axis of the kidney at an oblique angle. This position secures support from the parietal wall at the lower angle of the wound, and favors correction of flexion of the ureter, provided there is one.

CONTRIBUTION TO OUR KNOWLEDGE OF TUBERCULOSIS ANTITOXIN.

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In a paper on this subject, published in 1897, I reported on a series of experiments, which, although not altogether uniform in their results, certainly established the existence of a substance with a pronounced affinity for the toxin of the tubercle bacillus. To the experienced and well-versed reader this was nothing new; antitoxic properties of the serum of animals treated with tubercle bacilli or their metabolic products had before been observed and described repeatedly, the whole question being only sidetracked by the very natural desire to employ this quality practically. The inadequacy of the antitoxic intensity for therapeutic purposes led to a doubt of its existence, and up to this day this consideration of practical possibilities has dominated the subject. It is not my aim to here enter into a discussion of the startlingly prolific literature on antituberculous serum. A surprisingly large percentage of it exhibits an utter ignorance of the principles involved, and only too often the wish has been made the father of the thought. The goal that I was trying to reach in my experiments was not the finding of antitubercular substances, about the existence of which there could be no reasonable misunderstanding, but the establishment of accurate and definite numeric proportions of their potency. There was absolutely no work done in this line up to that time, and, in spite of the fact that to-day, after almost two more years of assiduous and untiring labor and the imbibing of the grand and penetrating train of conceptions originating with men like Ehrlich and Behring, for whose personal kindness to me my gratitude will never cease, my conclusions appear to me in many respects questionable, I can not help asserting that my work was carried on in the proper lines, and that it laid a foundation which I must consider final.

The problem of paramount importance in dealing with the tuberculosis-antitoxin question is the nature and specificity of the toxin concerned. After Koch's work on the new tuberculin, all further efforts as to the production of a stronger and more concentrated toxin seemed to be useless; Koch himself expressed this view quite pointedly. The toxin which I used for my experiments was a combination of the two forms of new tuberculin, TO and TR, and was of a toxicity hitherto unknown, when freshly and properly prepared. Ever and again, however, the question was mooted, whether in these toxins we had to deal with a specific substance, or perhaps with several specific substances, or finally whether the toxicity of it was of the nature of one of the well-known bacterial proteins. It was Buchner who especially advanced the latter hypothesis, and, even now, in the mind of many physicians, tuberculin and its derivatives are bare of any specific significance. The specificity of the tubercle toxin was the *conditio sine qua non*, and without any definite knowledge about it, all further attempts to explore the problem under discussion were bound to remain inconclusive.

Well knowing the importance of this point, Behring worked on it and was last year able, after a long and laborious research, to demonstrate that the nature of the bacterial poison in absolutely all the different forms of the so-called tuberculosis toxins is exactly the same, and that only quantitative differences obtain. Following an irrefutable method he showed that an antitoxin prepared by the action of one of these toxins formed in certain definite proportions neutral or inert compounds with all of them, so that it was possible to counteract the toxic effect of any one of them by a given amount of one and the same antitoxin. The far-reaching effect of this discovery can not be overestimated; as a practical consequence it may be mentioned that it enables us to exactly ascertain the real value and potency of the numerous "improved," or "purified," or attenuated tuberculins, or antiphthisins, or extracts, which have sprung into existence of late and which without a single exception are no more nor less than dilutions of the common tuberculin. For the scientific exploration of our subject, entirely new paths have been opened by the demonstration of this specificity and unity of the tubercle toxin, although it must be admitted that no additional knowledge has been directly gained as to the chemic nature of the latter.

That much is certain, that the tubercle toxin differs chemically in many directions from the bacterial toxins so far studied most thoroughly, the tetanic and diphtheritic toxins. To enter into a discussion of these problems would necessitate a recapitulation of Ehrlich's admirable researches and lead too far.

Another difficulty which most seriously hindered the investigations was the determination of the toxic potency of the toxin and the preparation of substances of a high toxicity. Here, too, new light is shed by Behring and his disciples. The reason for the utter discrepancies between the results of different observers, with one and the same toxin, is to be looked for here. In the absence of a certain and easily controllable standard it was almost an impossibility to obtain satisfactory comparative results—all efforts foundered on this rock. If I may refer to my method of preparing a very effective toxin, it will be remembered, that with 15 to 17 mg. of dry substance an adult guinea-pig could be invariably killed. In the course of my experiments I suspended this amount in a smaller quantity of fluid than origi-

nally directed, on account of the disturbances that sometimes a quantity of 15 to 17 c.c. subcutaneously set up. Now, while the fresh toxin always gave uniform results, changes sometimes became evident after a very short time—two to three days—the suspension losing considerable of its toxicity. The same was true for the dry substance, and the same holds good for the two new tuberculins and for the old tuberculin, in fact, for any form of tuberculosis toxin. In other words, these toxins are very labile, seemingly more labile than the diphtheria and tetanus poison, and can only be preserved unaltered in their specific effects for a short time or under certain precautions.

More embarrassing, perhaps, than this exceeding changeableness of the toxins, is their comparatively low toxicity. Of the common forms of tuberculin, from .5 to 3 c.c. are necessary for a fatal effect in healthy guinea-pigs of 300 to 450 grams weight, and besides, the susceptibility of the individual animals varies greatly.

In addition to these facts it must be remembered that the physical nature of the different forms of toxins (fluids, emulsions, dried, living or dead bacilli, bacillary dust) prevents making sure that in each case the inoculation is made in the same way, and that the resorption is homologous in its course. The ideal way out of these difficulties would be the use of a standard or test serum; unfortunately, however, for this purpose the serum ought to be of a very high antitoxic potency, which in spite of all efforts has not been obtained yet. That we will be in possession of it in the near future may be assuredly predicted.

It is a disciple of Behring, von Lingelsheim, who, by introducing intracerebral injections, made it possible to arrive at very accurate results in the determination of the toxicity of our toxin. Following the method of Ehrlich in the testing of diphtheria toxin and not attempting to produce pathologic effects (tuberculin fever—or reaction) as the characteristic point of the toxic action, he determined the dose necessary to bring about the death of the animal experimented upon. Thus he found that it took 1/180 of the subcutaneous or intraperitoneal dose to kill a guinea-pig of 250 to 300 grams by intracerebral injection.

After a long series of experiments I can fully corroborate these statements; I only find it necessary to confine oneself to one and the same size of the animals, those of 250 to 300 grams being the most suitable. Larger guinea-pigs seem to be absolutely and relatively more susceptible to the intoxication and with them too the proportion between the weight of the body and that of the brain is larger. In the former it varies between 102.1 to 109.1 (von Lingelsheim 110.1), while in pigs of 510 to 700 grams the proportion is, after my weighings, 120.1 to 135.1. These differences account for many otherwise unaccountable discrepancies between the findings of different observers.

The method of toxin testing by intracerebral injections is very simple and, after some little practice, seldom accompanied by a failure. In addition to the proofs brought out by von Lingelsheim, who injected peptones and other substances for comparative purposes, I may state that of seventeen animals injected in this way with indifferent solutions (salt, bouillon, etc.), none showed any disturbances whatsoever, while in toxin injections the effects became manifest in strict congruity with the amount of the dose. A description of the method will be found in the paper quoted. In my experiments I never used more than .2 c.c., Koch's syringe being the best for the operation. The results thus gained are exceedingly valuable; before I enter into them, we have to cast a glance at the toxins used for the experiments.

In Koch's new tuberculin a toxin seemed to be found that could not be excelled in toxicity by any other preparation. This, however, was a mistake. We owe to Behring the knowlege of methods by which substances may be obtained 60 and 100 times stronger than tuberculin. The strongest toxin which I have been able to prepare is about four times stronger than TO and kills a guinea-pig of 250 grams (intracerebral injection) in the dose of 0.00025 or 1/4000 gram. Behring's strongest toxin has more than double the potency of this. The preparation of these substances is very difficult and altogether impossible without specially constructed and very expensive machinery. It is especially the grinding apparatus that has to be at once effective and perfect; a machine which I had constructed for this purpose triturates, within one hour, ten grams of bacilli into such an impalpably fine material that after emulsifying it with glycerin solution my very powerful centrifuge hardly yields any precipitate. For ordinary purposes this bacillary dust (TBT) forms a toxin very suitable for immunizing purposes. Its toxicity is much increased, when before triturating, the washed and dried bacilli are successively extracted with 1/10 normal NaOH solution, alcohol, ether and carbon sulphid (TBET, see the tables). If the bacilli, treated in this way and triturated afterward, are suspended in a 10 per cent. glycerin solution and for about one hour subjected to the heat of overheated steam (130 to 145 C.) in an autoclave, and if the hot fluid is rapidly filtered, quite a voluminous precipitate is formed. Dried in vacuo and kept in small evacuated bottles, this precipitate forms the most powerful toxin that I obtained, killing, as I said, in the dose of 1/4000 gram (TDR; Behring's designation for this form of toxin). The handling and preparing of these substances is a very delicate task, exposure to moisture, direct light and to the atmospheric air deteriorating them very rapidly. It would fill an especial paper to describe the incident details.

In order to achieve good results it is absolutely necessary to utilize only fresh and vigorous cultures; I prefer cultures that are obtained from sputum after one passage through a guinea-pig—the guinea-pigs must die within twenty-eight days after the injection with the sputum; my original very virulent culture has become very much attenuated during the successive transplantations, and so I was led to raise new cultures from acute cases of tuberculosis.

In determining the toxity of the different forms of tuberculosis toxin it is a very interesting and important fact to note that while the TBT and, also, the TBET preparations, made from cultures of varying origin differ somewhat (although not very considerably) in the degree of their toxic effect, this is absolutely not the case in the TDR toxins; a given amount of them always yields the same result. It may be that the opinion is correct, that the elaborate chemic processes to which these substances are subjected in the course of their preparation have split up the original toxin molecule; since, however, through Behring, their specificity is established, we must assume that this diminution in size of the toxin molecule has

made them more easily assimilable. Indeed, we find that the toxic action with them is considerably quickened. Presumably in the case of the original tuberculosis toxin molecules, something in the way of an "addiment" is necessary for the binding and breaking up of them, while with the TDR groups a direct neutralization or assimilation by the "*seitenketten*" or antitoxin groups may be possible. However this may be, TDR represents a substance which, although certainly not chemically pure or forming a definite chemic compound (it gives the biuret reaction, is salted out quantitatively by ammonium sulphate, etc.; more about these reactions we may soon expect to hear from Behring himself), always quantitatively and qualitatively acts alike, provided that it is kept and preserved with the necessary cautions.

The toxic action of these different substances may be gathered from the following experiment records:

1. *Toxicity determination of TBT.*—The four-weeks-old bouillon cultures were filtered, the bacilli washed with distilled water, dried and pulverized (guinea-pigs die within four weeks after inoculation with the culture). H. T.=highest temperature.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of dry toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day.
270	0.2	0.002	40.2 C.	Dead	
250	0.2	0.001	40.5 C.	Dead	
265	0.2	0.0005	39.0 C.	39.2	38.4
275	0.2	0.00075	40.1 C.	40.0	38.2
285	0.2	0.0009	39.7 C.	Dead	
266	0.2	0.0009	39.9 C.	39.6	38.4

Least fatal dose: 0.001 gm. (intracerebrally); 1 gm. of the toxin = about 1400 M. (M = 1 gm. of guinea-pig.)

2. *Toxicity determination of TBT.*—The same toxin as in 1, after being exposed to light and air in a loosely-stoppered bottle for six days.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of dry toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day.
265	0.2	0.001	39.5	38.2	38.1
270	0.2	0.002	40.2	Dead	
270	0.2	0.0015	40.1	39.5	38.5
285	0.2	0.0019	40.3	Dead	

Minimal fatal dose: 0.0019 gm.; 1 gm. = 850 M (approx.).

There has been, therefore, a loss of toxicity of 39 per cent.

3. *Toxicity determination of T. Alc.*—A toxin prepared from common tuberculin by precipitation with alcohol.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of dry toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day
300	0.2	0.001	38.2	38.4	38.3
257	0.2	0.003	38.7	38.3	38.4
250	0.2	0.006	39.8	Dead	
285	0.2	0.005	40.1	39.6	38.4
275	0.2	0.0055	40.2	39.8	38.4—20 g. loss.

Minimal fatal dose = 0.006 gm; 1 gm. = 255 M.

4. *Toxicity determination of Koch's TA.*—See for description of preparing this toxin Koch's article on TR. The culture used was a very virulent one.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day.
280	0.2	0.025	39.6	40.2	Dead
270	0.2	0.023	40.2	39.6	38.4
275	0.2	0.024	39.2	39.5	38.2
260	0.2	0.020	38.6	38.4	38.4

Minimal fatal dose: 0.25 c.c.; 1 gm. = 62 M.

The old tuberculin of Koch (TK), which is about equal in its toxic value to the TA, would, therefore, be expressed approximately by the equation, 1 gm. = 60 M. It must be remarked, however, that the toxicity of the different cultures varies within wide limits and repeatedly; especially when the culture fluids are evaporated in vacuo together with the bacilli, tuberculins are obtained for which the formula, 1 gm. (TK) =160 to 180 M. holds good. This is a point of vital importance for the therapeutic and diagnostic use of the old tuberculin.

5. *Toxicity determination of Koch's TO.*—Prepared from cultures which kill, inoculated subcutaneously (mode of inoculation described by Spengler) into guinea-pigs, within 3 to 4 weeks. The toxin contains 54 per cent. of the substance of the triturated bacilli.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of dry toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day.
265	0.2	0.0015	39.7	Dead.	
270	0.2	0.0012	40.4	Dead.	
275	0.2	0.001	39.9	Dead.	
260	0.2	0.0008	40.4	39.6	38.4
255	0.2	0.0005	39.2	39.0	38.2
270	0.2	0.001	39.8	40.4	Dead.

Minimal fatal dose: 0.001 gm.; 1 gm. = 1500 M.

6. *Toxicity determination of Koch's TO.*—Prepared from a culture that had been grown on agar for two years.

Weight of guinea-pig—gm.	Amount of fluid injected—c.c.	Quantity of toxin—gm.	Results. H. T. 1st day.	H. T. 2d day.	H. T. 3d day.
260	0.2	0.001	39.2	38.4	38.2
270	0.2	0.002	40.4	Dead.	
270	0.2	0.0015	39.8	Dead.	
265	0.2	0.012	39.5	39.1	38.8

Minimal fatal dose (approx.): 0.0015 gm.; 1 gm. (approx.) = 1000 M.

7. *Toxicity determination of TR.*—This toxin was prepared from the material of Experiment 5.

Weight of guinea-pig—gm.	Amount of fluid—c.c.	Quantity inoculated gm.	Results. 1st day.	2d day.	3d day.
300	0.2	0.0015	38.6	38.4	38.4
305	0.2	0.002	39.2	39.0	38.5
280	0.2	0.0025	39.6	39.5	39.0
285	0.2	0.003	40.2	Dead.	
260	0.2	0.0027	39.2	39.4	39.0
280	0.2	0.003	38.8	Dead.	

Minimal fatal dose very nearly 0.003 gm.; 1 gm. = 520 M. (very nearly).

TR is therefore 6 to 7 times more toxic than the old tuberculin.

8. *Toxicity determination of TD.*—After the so far incomplete and unsatisfactory directions given by Behring, I have tried to prepare a substance of high toxicity. The result was a toxin, which although not reaching the efficacy of Behring's most potent prepa-

ration, still invariably kills when injected subcutaneously in the dose of 0.05 gm. My impression is that it is a matter of virulence of the cultures used to enhance the toxicity, since even without the very complicated processes necessary for the manufacture of this toxin, I have formerly been able to prepare toxins of even higher potency. Just now I am experimenting with a culture which bids fair to reach the former high standard mentioned in my previous paper. I have already given the method and have only to add that it is incumbent on every one who attempts to repeat the experiment to go through it with the utmost possible speed. That a full equipment of apparatus and machinery is the main condition, has been stated before. The TD or TDR represents a white crumbly powder, which is somewhat hygroscopic and easily dissolves in water of a very slight alkalinity (.1 c.c. normal KOH or NaOH solution to 99.9 c.c. of H_2O). It must be kept in evacuated flasks and be protected against moisture and light. I keep it in a way analogous to that in which the standard serum of the Berlin Institute for Serum Testing is preserved.

Weight of guinea-pig—gm.	Amount of fluid—c.c.	Quantity inoculated gm.	Results.		
			1st day.	2d day.	3d day.
275	0.2	0.0005	39.2	Dead.	
270	0.2	0.001	40.2	Dead.	
255	0.2	0.0004	39.8	Dead.	
260	0.2	0.0001	39.2	39.4	38.8
285	0.2	0.0002	39.6	39.8	39.0
290	0.2	0.0003	40.1	Dead.	
265	0.2	0.00025	38.8	Dead.	
290	0.2	0.00025	39.6	40.4	39.8 Dead.

Minimal fatal dose: 0.00025 gm.; 1 gm. = 5888 M.

It may not be amiss to attach to these determinations a few records which show in a comparative way the exactness of the method used. The toxins employed were the same as those used in the just described experiments; the amount of fluid injected was always 2 c.c.

Weight of guinea-pig—gm.	Dose of toxin.	How administered.	Calculated intracerebral dose.	Found intracerebral dose.	Fo'nd dead hours after inoc.
295	0.555 TR (7).	Subcutan.	0.00315	0.00308	40
282	0.530 TR (7).	Intraperiton.	0.00301	0.00293	28
250	0.158 TO (5).	Subcutan.	0.00092	0.00088	36
273	0.169 TO (5).	Intraperiton.	0.00101	0.00094	23
305	0.295 TO (6).	Subcutan.	0.0017	0.0016	44
266	0.235 TO (6).	Intraperiton.	.0015	0.0013	25

As will perhaps be remembered, I followed in previous experiments the method of employing tuberculous guinea-pigs for testing the strength of the toxin; the works especially of Kasparek and Borrel suggested a method which fascinated by its ingenuity. A more sober contemplation, however, of the facts in the case soon afterward showed that it was misleading, and that here, more than anywhere else, the individuality of the animal made itself felt. It is true, after a very short time following the inoculation of tubercle bacilli, the greater number of guinea-pigs show a typic reaction on tuberculin injection. But the length of time after which the phenomenon may be observed varies considerably, even when one and the same culture is employed—from 1½ to 6 days—and the results become altogether unsatisfactory (because incomparable) when different cultures or successive transplantations of the same culture are used. While in diphtheria experimentation these differences can easily and correctly be estimated in a few days, with tubercle bacilli several months are needed, thus practically precluding the feasibility of the method. Through von Lingelsheim we know that it takes from 1/500 to 1/1000 of the fatal subcutaneous dose intracerebrally to kill a tuberculous guinea-pig of a given weight. I did not attempt to verify this assertion, although there is not the slightest doubt that it will be found correct. In a few cases in which I injected one-half and one-third of the otherwise fatal dose into the brain of newly infected animals, the latter died very rapidly; I am, however, not in a position to give exact figures.

The eminent importance of this work as regards the exact determination of the toxicity of tuberculosis toxins becomes evident the moment we approach the question of a tubercle antitoxin. The discouragingly diverging opinions on this subject are for the greater part due to the employment of methods that allow of no comparison (difference in the strength of the toxin), and to some degree to the relative inertness of the toxins used, as well as to the inefficient amounts of toxins injected into the animals that were to be immunized. We even read about injections of triturated organs of tuberculous guinea-pigs and rabbits as an immunizing agent.

Leaving out for the present any consideration of the therapeutic utilization of such an antitoxin, it is a comparatively easy task to demonstrate its existence. If suitable animals are for a certain time regularly treated with increasing doses of tuberculosis toxins, their serum acquires the property of neutralizing in fresh animals the toxic effects of these very same toxins. On specific tissue-cells the latter act as a stimulant to hyperproduction of peculiar molecular groups with a strong affinity for the toxin molecules; this surplus of antitoxic groups is discharged into the circulation and is found in the serum, where it can be experimentally demonstrated. Ehrlich's theory of this interesting process is supposed to be too well known to need quotation here.

In tuberculosis it was for a long while a matter of doubt which of the different toxic materials was the specific one, and which one therefore was to be used in the antitoxin producing process. I myself have fallen a victim to this doubt, and believing in a variety of toxins, have pointed out that TR and TO ought to be the ones promising the best results. That this way of looking at the question was wrong we now know through Behring's researches; it is essentially indifferent whether we work with the old tuberculin, with TA, TO, TR, TDR, or any other modification. The practical difference is only given by the degree of toxicity and the intensity of the antitoxin producing reactions caused by it. After all, the toxicity of the tuberculosis toxins is slight, when compared with other bacterial toxins, and the relative amount of poison, therefore, to be introduced into an animal's organism is very considerable. Necessarily the best results must be obtained with high doses of the most potent toxic preparations; there are practically no prospects for even large amounts of the old tuberculin and similar substances.

The question as to the fitness of the different animals for the antitoxin production has been much discussed. It seems reasonable to employ only species which are susceptible to tuberculosis, and as early as March, 1898, I pointed out in a paper read before the Chicago Academy of Medicine that it would be dis-

cussable whether or not a preliminary artificial infection of these animals would prove of practical value. This idea has found a most surprising confirmation by the announcement of Behring that he succeeded in curing a tuberculous cow by intraperitoneal injections, and that the serum of this animal possessed a very appreciable amount of antitoxic potency (2.5 c.c. neutralize 1.5 times the fatal dose for a guinea-pig). I can confirm this assertion by my observations on two tuberculous cows in my possession, under treatment for more than eight months, and by this time cured, the disease not only having not progressed, but all the symptoms having disappeared (lungs clear, glands reduced and cicatrized, no reaction on enormous doses of the most toxic preparations) after continued intraperitoneal injections of TBET and TBT. I have not made an exact investigation into the qualities of their serum, but have found that its antitoxic potency is quite marked.

(To be continued.)

Society Proceedings.

Chicago Gynecological Society.

Regular Meeting, March 17, 1899.

Dr. T. J. WATKINS occupied the chair in the absence of the president, Dr. Nicholas Senn.

Dr. FRANKLIN H. MARTIN exhibited specimens and made further report of

IMPLANTATION OF THE URETERS INTO THE RECTUM.

In the JOURNAL for Jan. 28, 1899, he described the new operation, having for its object the making of subsequent infection of the ureters and kidneys impossible after double implantation of the ureters in the rectum. In the March number of the *Am. Gyn. and Obstet. Jour.* he reports the post-mortem findings in these experimental operations for ureterorectal anastomosis, where no effort was made to provide for valve formation, and in which the reports show unmistakable signs of infection of the kidneys due to ascending infection through the ureters. He has operated upon nine dogs by this new operation, two of which recovered from the operation.

The paper deals with the report of the first dog which lived in the second series, that is, one operated upon after the improved method described in the JOURNAL, already referred to. The dog was operated upon Dec. 22, 1898, and was anesthetized and killed March 11, 1899, having lived nearly three months.

Operation.—1. The patient is placed in the Trendelenberg position; the abdominal incision is made so as to expose the rectum, and the omentum and intestines are packed back. A longitudinal incision of the peritoneum over the ureters is made down to their insertion into the bladder, and they are dissected out with the finger to a height of about three inches; each ureter is tied near the bladder with strong silk and then they are severed above that point. 2. Each ureter is brought forward, and then they are approximated in front of the rectum by including the wall of each in one fine silk suture armed at each end with cambric needles; the ureters are further approximated by two fine silk sutures passing through the outer walls of the ureters only, securing the two tubes parallel. The severed ends of the ureters are placed on a gauze sponge while executing the next step. 3. A longitudinal incision two inches long is made through the peritoneal and subperitoneal tissue of the upper wall of the bowel, and this tissue is dissected back so that an oval surface of the muscular coats of the intestines is exposed, the length of the primary incision in the bowel, and one inch wide at its center. The flaps are held apart by silk stays, tenacula or small retractors. 4. After making sure that the bowel is free from fecal matter and having secured it above by a clamp, he makes a small incision through the remaining coats of the bowel about large enough to admit the two ureters without pressure, and about one-third the distance from the lower end of the oval denudation and passes the double-threaded suture, previously placed in the ends of the two ureters, through this opening into the interior of the bowel, bringing the needles out a short distance apart, slightly below the lower end of the denudation, about one inch from the opening made for the ureters, and draws the ureters through the opening and to the point at which the stay silks find their exit. 5. Elevating the two ureters at right angles to the bowel, they are secured to the fibrous and mucous coat of the bowel by a number of closely applied sutures of fine catgut or silk, great care being necessary not to penetrate to the mucous coat of the ureter or to apply the sutures so as to constrict the ureters. The ureters are then laid parallel with the bowel on the denuded portion, the handling silk being made taut and additional sutures passed, securing the ureters to the muscular coat of the intestines as it is rolled in by the tension of their ends. 6. The ureters are now buried in the muscular coats of the bowel by holding those coats over them for a distance of one inch, and securing them to the ureters by fine silk sutures. 7. The peritoneal coat of the bowel is closed over the ureters to the point where they separate and then below them above that point. This is accomplished by a running inversion stitch of silk. A few additional interrupted sutures of silk attach the peritoneal coat to the outer coat of the uterus. He closes the abdomen with a small gauze drain, passing down to the bowel in the lower angle of the wound.

Principles.—The principles of Dr. Martin's operation are:

1. The ureters empty into the bowel in the direction of its long diameter, and from above downward, so that the urine is discharged in the direction taken by the fecal current.

2. The ureters are buried in the walls of the rectum for a distance of an inch or more longitudinally, so that in the act of defecation the fecal mass will squeeze the caliber of the ureters closed by its pressure on the mucous membrane, and that pressure is exerted from above downward in the direction of the onward flow of the urine, thereby emptying the ureter by a milking process.

3. The ureters are further protected by the muscular coat of the intestines. This is accomplished by surrounding them in their longitudinal course through the intestine to the extent of two centimeters by the circular coat of the bowel. This muscular coat of the bowel, in acting from above downward, milks the urine downward and holds the ureters closed when the rectum is aiding in defecation. When the contraction and closure due to the defecation are over, the urine will spurt forth with considerable force, acting as its own cleanser.

4. The ureters are implanted in the lower bowel, which is normally empty except at defecation.

A preliminary report of bacteriologic findings during life and post mortem in case of implantation of both ureters into the rectum, was given by Dr. F. Robert Zeit of the Klebs Pathological Laboratory, the substance of which is as follows:

Case 4.—March 11, 1899, large black male dog weighing forty-five pounds. Dr. Martin operated on this dog, which had been kept with a number of others, three months ago. The dog lately contracted an infectious disease common among dogs, beginning with diarrhea, purulent conjunctivitis, poor appetite, fever, and ending with great emaciation and an eruption all over the body. Under the circumstances Dr. Martin decided to have an immediate examination, the dog having been quite well until a short time ago. On March 11 he was chloroformed, the abdomen opened, and cultures and cover glass smears taken from incisions into the liver, spleen and right and left kidneys, with the following results: Right kidney, smear, no micro-organisms found; culture gave growths of bacillus coli commune. Left kidney, smear, no micro-organisms found; culture showed no growth. Liver, smear, no micro-organisms found; culture, bacillus coli commune and coffee-bean like diplococci. Spleen, smear, cocci; culture showed staphylococcus aureus, staining by Gram. After these procedures the dog was killed by drawing the blood from the right carotid.

Post-mortem examination.—Heart, lungs, liver, spleen and intestines apparently normal; both ureters were found implanted in the rectum six inches above the anus. Water poured into the pelvis of the kidneys passed into the rectum, somewhat easier from the left than from the right kidney; mucosa of rectum normal. Both ureters enter the recum at about the same point, the mucosa showing a papillomatous nodule about the size of a large pea, from the base and sides of which spurts one fine stream when water is poured into the pelvis of the right kidney. If the same procedure is undertaken upon the left kidney, two fine streams spurt from the side near the apex of this papillary growth. It would seem that what operative skill can achieve has been realized here; and yet the right kidney shows, on section, the picture of suppurative nephritis. The capsule, non-adherent, being removed, numerous elevated, yellowish, purulent foci of the size of a millet seed are seen distributed over the whole surface of the cortex. Upon section, yellowish, purulent rays are seen extending toward the surface

of the organ and there ending in the millet seed elevation just described. Hyperemic areas are seen along the bases of the pyramids and along the regions of the interlobular vessels and vasa recti. The pelvis is empty and apparently normal. No bacteria were found in it in cover glass smears.

The left kidney is almost normal except a portion along the middle of the convex border, which has a nodulated appearance similar to that of the granular kidney of chronic interstitial nephritis. The capsule was slightly adherent over this portion; pelvis normal.

The bladder, strange to say, was found moderately distended with a semipurulent fluid which escaped from the urethra when pressure was exerted. Cultures and cover-glass smears were taken directly from the bladder. Smear: staphylococci, streptococci, biscuit shaped diplococci. Cultures: staphylococcus aureus and streptococcus, staining by Gram, and biscuit-form diplococci, decolorized by Gram. Cover-glass smears and cultures from blood of both ventricles showed no micro organisms or growths. The histopathology of this case has not yet been completed.

In summing up the different findings of this case, staphylococcus aureus, streptococci and diplococci in the distended bladder, staphylococcus aureus in the spleen, it is evident that this dog has been infected from other causes than those following the operation. The absence of pyelitis in this case contrasts markedly with the findings of former post-mortems reported before the society, and speaks in this case against an ascending infection from the rectum up. If the left kidney can be taken for a criterion of what is to be expected after such operations, the results might be considered in a more favorable light. It is possible that this left kidney shows what would have become of the right kidney had the dog been allowed to live.

Dr. REUBEN PETERSON reported

A CASE OF TUBERCULOSIS OF THE MESENTERIC GLANDS.

Tuberculosis of the mesenteric lymph-nodes as a primary disease is but seldom recognized. This is not strange when it is considered that there are no pathognomonic symptoms of the affection, and that the glands in their early stages are not palpable. From an experience with four cases of tubercular mesenteric disease he is convinced that the glandular enlargement is usually accompanied by a certain amount of abdominal pain, which, while not pathognomonic, may, when long continued in young subjects, lead one to suspect the existence of the disease. It is for the purpose of adding to the sum total of our knowledge of the subject that he is led to report the following case:

L. M., colored, aged 9 years, school girl, was referred by Dr. J. L. Van Valkenburg. There was a doubtful family history of tuberculosis, the father having died of a pulmonary trouble brought on by exposure, and the mother at the present time suffering from some lung trouble. The patient never has been strong, but was not noticeably different from other children until some three years ago, when, during a portion of each day she complained of abdominal pain. She would leave her play and come to her mother complaining of stomach-ache. This pain had been increasing in severity. She had had a protruding navel for some years, but this had not been considered of any importance, as the pain was situated more in the epigastric region. The appetite was excellent. There had never been any diarrhea.

The patient was admitted to the Charity Hospital, Jan. 5, 1899. He had only a few minutes in which to examine her prior to operation at the Post Graduate Hospital on the following day. There was a slight umbilic hernia with impulse on coughing and an opening in the fascia admitting the forefinger, otherise the abdomen seemed normal to inspection, palpation and percussion, excepting a somewhat localized tenderness just to the right and two or three inches above the umbilicus. Satisfied that the hernia could not explain the abdominal pain, he determined to operate for a radical cure, and at the same time seize the opportunity of thoroughly exploring the abdominal cavity.

An elliptic incision, three inches in length, was made so as to include the umbilicus. The latter was removed, and the edges of the fascia freshened. A thorough exploration of the abdominal cavity showed no abnormality except enlarged mesenteric glands. These glands were numerous and varied in size from a pea to that of a bean. The large glands were situated more toward the pelvic cavity. The peritoneum was smooth and apparently perfectly normal. The intestines were not injected. Six of the enlarged glands were removed for microscopic examination, and the incision in the mesentery closed with fine catgut. Fine catgut was used in closing the peritoneum, while No. 3 chromicized formol catgut was used for the fascia and silkworm gut for the skin.

The microscopic examination of the removed glands, as made by Dr. Zeit of the Klebs Pathological Laboratory, is exceedingly interesting and as follows:

Tuberculosis mesenteric gland.—A small mesenteric gland was received for examination, and upon section showed whitish nodules. Direct cover-glass smear preparations from the freshly cut surface of the gland showed about thirty tubercle bacilli.

Histologically.—The lymphadenoid tissue is scanty and replaced by areas of caseous necrosis, epithelial cell proliferation, and many miliary tubercles, showing the characteristic structure of giant cells surrounded by epithelial cells, and an outer mantle of small round-cell infiltration. Most of the giant cells have necrotic centers and in nearly all of them tubercle bacilli can be demonstrated.

Two years ago Dr. Peterson reported before this society the case of a young girl, 11 years of age, where an exploratory laparotomy revealed enlarged mesenteric glands as the only lesions explanatory of her continual abdominal pain. No direct smears were made of the removed glands, and no tubercle bacilli were found in the sections, but the histologic appearance left no doubt as to the tubercular nature of the growths. While admitting that the outcome of the case was problematic, he ventured to express a hope that, as in the case of tubercular peritonitis, a favorable issue might result from the laparotomy. Within two weeks he has heard, through her family physician, that the patient is in the best of health and presents no evidences of constitutional or local disease. Less than three weeks after the operation in the case just mentioned, he operated upon her sister, who presented similar symptoms of continued abdominal pain and tenderness; enlarged mesenteric glands were found, and microscopic examination of a number removed showed the tubercle bacilli present. This patient is also in excellent health to day.

In a paper presented to the American Gynecological Society in May, 1887, he mentioned a third case of enlarged tubercular mesenteric glands, operated on in 1891 for the same continued abdominal pains. Although an unfavorable prognosis was made at the time of operation, the patient is alive and well at the present time.

In all four cases mentioned there was abdominal pain with localized tenderness severe enough to lead to an exploratory abdominal incision. The time since the operation in the last case is too short to draw any deductions. In the three other cases the pain and other symptoms have ceased, and they are in good health. While this does not prove that the glands are now free from tubercular deposits, or that the opening of the abdomen was a factor in the amelioration of the symptoms, there are good reasons for believing that both may be true. We are far from being able to explain the action of the peritoneum upon growth involving the membrane itself, as tuberculosis of the peritoneum, or where the neoplasms are deeper seated and are merely covered by the peritoneum. Not a few cases are on record where growths undoubtedly malignant in character have been found to have markedly decreased upon examination at a second laparotomy. White, in an article entitled "The Supposed Curative Effect of Operations per se," records many curious cases where abdominal tumors have diminished after the mere opening of the peritoneal cavity. It can not be denied that the mere cutting into the peritoneal cavity produces physiologic changes different from those met with elsewhere in the economy. The exact nature of these changes has never been satisfactorily explained.

It can not be denied that the cases described might have recovered without an abdominal section. This argument was at first used in cases of tubercular peritonitis where healed tubercular peritoneal lesions were found subsequent to operative procedures. Cases of calcareous tubercular mesenteric glands have not infrequently been found post-mortem. Oftentimes these were the sole evidences of tuberculosis present. As an example of spontaneous cure of tubercular deposits in the mesenteric glands, he cited the following case, the notes of which were furnished him by Dr. A. E. Halstead.

Miss B., aged 20; one sister died of tuberculosis. At the age of 15 some glands, thought to be tubercular, were removed from the neck. A year and a half later Dr. Halstead removed a cervical gland which microscopic examination showed to be tubercular. Six months later, in May, 1896, the patient had an attack of appendicitis, calling for the opening of an abscess located in the ileocecal region. Previous to this attack the patient had been a sufferer from abdominal pain and bloating. A portion of the abscess wall was excised and shown by microscopic examination to be tubercular. Emaciation, night sweats and elevation of temperature followed. There was no ascites, however. Two months after the operation she weighed but sixty-seven pounds. Under tonic treatment she was apparently

restored to health, and her weight more than doubled. One and a half years ago she developed a small hernia at the site of the operation, which was radically cured by Dr. Halstead, Feb. 10, 1898. By inspection the parietal and visceral peritoneum was seen to be normal. After pulling out a loop of the intestine the mesentery was found studded with hard calcareous masses, varying in size from a split pea to that of a small marble. No enlarged glands were present which did not exhibit the same changes. A few similar calcareous masses were found retroperitoneally. There was no fluid in the peritoneal cavity.

The presumption in this case is that the mesenteric glands were affected at the time of the removal of the tubercular cervical glands. The calcareous changes probably were coincident with the progressive gain in weight and recovery.

(To be continued.)

Associated Health Authorities and Sanitarians of Pennsylvania.

Sixth Annual Meeting, Harrisburg, Pa.

Dr. RICHARD SLEE in the presentation of a paper on

MODERN METHODS IN THE PRODUCTION OF VACCIN VIRUS,

said in part: Early in 1898 Dr. Lee prophesied an outbreak of smallpox in this and adjoining States, tracing up the advancing wave from its foci in the Southeastern States where it had been lingering since February, 1897. Events are showing the clearness of his judgment. All over the country, reports come, not of isolated cases but of areas where the disease is epidemic. The Marine-Hospital Service reports 1925 cases with 36 deaths between Dec. 1, 1898, and Feb. 10, 1899. It is spreading with alarming rapidity, and as Sir R. Thorne has said, "the year 1899 may see an epidemic such as has been unknown to the present generation." This may be properly used to express the situation on this side of the ocean as well. What is the cause for the recrudescence of this disease? Several factors are at work. After importation from Cuba it appears in the mountains of Virginia, Tennessee, Georgia, Alabama, and neighboring States, among the great unwashed and unvaccinated class of people, mostly of negro origin. Thence it is easily traced. For example, the outbreak among the waiters of Put in Bay, more recently among the unvaccinated recruits at Fort Niagara, N. Y., McHenry, Md., etc., the recruits being lodged in the Imperial hotel at Rochester, N. Y., while waiting transportation and, while so, exposed to a concealed case of the disease in one of the waiters.

Returning soldiers also spread the disease broadcast and the brunt falls severely on those sections where neglect to enforce vaccination has prepared an extensive field for it to grow upon. It is also rife where antivaccinationists are in force, and where they are now reaping the well seeded and nurtured harvest. As to which is the more criminal, neglect to vaccinate or direct antagonism, it is not my purpose to decide. We have all these centers of population, ill fed, ill housed, of Chicago, New York, Philadelphia, exposed every twenty-four hours to more direct contagion due to the vast tide of visitors. As an example of what can be done by thorough vaccination a report of Dr. Woodson shows the extermination, in three months time, of the disease by the vaccination of over 10,000 people in Holguin, Cuba, where for twelve years the disease has been epidemic. Not a single soldier contracted the disease, though doing guard dutyat the lazarettos, all having been thoroughly vaccinated.

Aside from neglect, there exists a marked timidity in voluntarily submitting to protection. Without doubt, a few people have suffered from mixed infection following vaccination. While this can not be laid at the door of protective inoculation with cowpox, save in rare instances, still the fact that such events may follow or accompany vaccination has led many competent workers in this country and abroad to endeavor to produce a vaccin free from all extraneous organisms, in other words, to give cowpox pure and simple, without any inflammatory or septic accompaniments. I want to emphasize this fact, that the investigations which have led to the present standing and methods of producing vaccin virus, the glycerinated pulp virus, are directly the result of a number of independent workers, many of them of the highest possible standing in scientific work and in no wise connected with any vaccin producing establishment or with any mercantile interest in such establishments. Among these may be mentioned Kitasato, that gifted and brilliant Japanese to whom the world owes the discovery in a great measure of diphtheria antitoxin. While we continue to use the calf or any animal as the soil on which to grow our crops of virus, it is an utter impossibility to exclude or prevent contamination with many organisms. Why is easily explained. Many organisms are persistent inhabitants of all animal surfaces; found not only on the skin, but deep down beneath the superficial layers and in the base of the hair follicles. This is why so much care is needed to prepare a patient for an abdominal operation, and even with twenty-four hours' careful preparation and the use of strong antiseptics, we sometimes fail to sterilize our field of operation, and have an infected wound. Many surgeons appreciating this, wear thin, sterilized gloves while operating. In the animal we have original infection many times multiplied owing to the greater number of hair follicles, and also to its habits, which we can not control. Should we succeed in saturating the surface of the skin with the stronger antiseptics, and rendering it a sterile soil, we could not produce a successful vaccination, owing to the great susceptibility of the vaccin organism and the readiness with which it is destroyed by even the mild antiseptics.

With the most careful preparation of the calf we begin the production of vaccin with an infected skin. That is not sterile. If we make a scratch and cause a little serum to flow and at once transfer a drop of this serum to a tube of culture-medium, and incubate it for a few days, we almost without exception have as a result a luxuriant growth of many organisms similar to the plate exhibited. Many of these are harmless, but there are some which bear a close resemblance to pus producing varieties, and the only way to decide this is to test them with some susceptible animal. Starting with an infected skin, the cowpox will be infected. Should we succeed in destroying the majority of organisms in the beginning, those undestroyed would reinfect the wound in a few hours and, if not, the exposure to the air of the stable would cause the vesicle to swarm with many varieties in a short time. It being impossible to produce a vaccin free from contamination, we must destroy or render harmless those germs present, and the one agent which has given the most satisfactory results in all hands is chemically pure glycerin. Vaccin virus stored in glycerin for three or four weeks is rendered practically sterile as far as extraneous organisms go. Glycerin is a very mild antiseptic agent, still you can prove its power of destroying germs by adding to some pure glycerin virulent cultures of any pathogenic organism and make cultures from week to week from this mixture. You will find that the cultures rapidly die out and the few organisms that may continue to grow, do so under such unfavorable conditions that they rapidly lose their pathogenic power and are without significance. It has been shown that the pus producing organisms are rapidly destroyed by the action of glycerin. The use of glycerin as a preservative is not a recent method. It was not till 1890 that the bactericidal action of glycerin was prominently brought before the world. As both pulp and serum are equally infected for all practical purposes, it is well to use that portion of the vaccin vesicle which possesses the greatest vaccinating power. Several observers have shown that the greatest percentage of vaccinating material is obtained in the cheesy underlying mass called the pulp; in other words, this seems to be the natural culture-bed for the cowpox organism. The modern method of preparing glycerinated pulp vaccin is:

A calf of suitable age, three to six months, should be kept in quarantine for a week; if healthy, then removed to the station. There it is placed on the table and the lower part of the abdomen, as far as the umbilicus having been shaved, is thoroughly washed with a solution of carbolic acid, then rinsed with sterile water and dried with soft sterilized towels. With a sterilized sharp scalpel, incisions are made parallel to the long axis of the body, on the clean shaven area. The depth of the incision should be such as to pass through the epidermis and to open the rete Malpighii, if possible without drawing blood. As these are made, glycerinated lymph, which by examination has been proved to be free from extraneous organisms, is run into them by means of a sterilized blunt instrument, and the point of the scalpel is also from time to time dipped into the vaccin emulsion. After five days or 120 hours the vaccinated surface of the calf is first thoroughly washed with warm soap and water, rubbed over it by the clean hand of the operator, and finally the whole area is cleansed with sterile water. The remaining moisture is then removed by sterilized sheets of blotting paper. The vaccinated incisions will now appear as lines of continuous vesicles raised above the surface, each line separated from its neighbor by about one fourth inch of clear skin. Any crusts which appear in the vesicular lines are picked off with a blunt sterilized instrument. The vesicles and their contents are then removed by means of a sterilized Volkmann's spoon and transferred to a sterilized bottle of known weight. By going over the lines only once with the spoon, it is quite

easy to remove the whole of the pulp without any admixture of blood. The abraded surface is carefully washed and may be dusted with fine oatmeal or starch and boracic powder. Subsequently the calf is transferred to the slaughter-house and the carcass is examined by the veterinary surgeon, who reports by certificate its condition. Should this not be satisfactory, the vaccin pulp from the animal is destroyed. The bottle containing the pulp is taken to the laboratory and the exact weight of the material ascertained.

A calf vaccinated this way will yield from 18 to 24 grams, or more, of pulp. This is thoroughly rubbed up in a sterilized mortar or in a mechanic triturating machine. When it is brought to a fine state of division it is mixed with six times its weight of a sterilized solution of 50 per cent. chemically pure glycerin in distilled water. The resulting emulsion is then transferred to small test-tubes, which are then aseptically sealed and should be stored in a cool place, protected from light. When needed for distribution it is drawn up into capillary tubes which are sealed in the flame of a spirit lamp. As soon as the pulp is thoroughly emulsified, agar-agar plates are made from it, and after incubation for seven days the colonies that have developed are examined. Week by week this is done. Invariably the colonies diminish until at the end of the fourth week the agar-agar plates show no development of colonies. The lymph is subjected to further culture experiments, and if these show freedom from extraneous organisms the matter is ready for distribution. The elimination of the extraneous organisms occurs with marked regularity by the end of the fourth week. The only exception is when the lymph originally contains a number of spores or bacilli of the hay, which are very resistant to the action of glycerin, but if the precautions are carried out, their presence may generally be excluded. The duration of the glycerinated lymph varies with atmospheric conditions, the fineness of the division of the pulp, and with the condition of the calf itself. Some yield excellent lymph, others poor. We must determine the value of each. One sample used at intervals of weeks after glycerination has given 98 per cent. Thus can be prepared a lymph which will continue for very long periods, though there is no need of keeping it. One can see from what has been said that the preparation of glycerinated lymph demands skill and care. This has been strongly insisted upon by Sir R. Thorne. His report of an examination of the chief Continental establishments fully explains what was found, and some places are under condemnation because of the difficulty of ensuring freedom from micro-organisms.

Until within a year or so, in America, serum dried on quills or points has been demanded; there seems to be an association in the minds of many between the ivory point and colorless serum. The fact is that the weakest portion of the vesicle exudes a serum having protective power. Pass this serum through a Pasteur filter and it is rendered inert. As the serum oozes through the base of the uncovered vesicle, it gathers the other organisms and holds them in suspension till dried. The use of this serum has no doubt given many people a wrong sense of security, its failure to take being accepted as evidence of immunity to smallpox. The absence of color is produced by washing the base of the vesicles and, of necessity, removing the major portion of active vaccin allows a clear straw colored serum to ooze up; this is notoriously unreliable, so that many advertise their points as trebly charged, in itself a confession of weakness of the serum. A pure cowpox will give practically 100 per cent. successes in primary cases. To the unaided eye the clear serum appeals, but when under the microscope we find red blood-cells, leucocytes, or pus-cells, epithelial debris, etc. Of the many objects present the only ones of clinical importance are the micro-organisms; these will rapidly reproduce millions of their kind.

In conclusion he compared the advantages of each, the dried points and the glycerinated lymph. Glycerinated pulp virus retains its activity for many months, increasing in power up to a certain variable point, being at its height at the end of two months or ten weeks from date of production. Dried virus is most active when fresh, but gradually loses power, becoming inert in four to six weeks, due to atmospheric influence. As to safety, the former, owing to the destruction of pathogenic bacteria, offers the most, while in the latter, should infection be there, we have no provision for its removal. The grinding and trituration of the pulp insures every portion being of the same power. The principle used in making tablet triturates, which enters into its manufacture, accomplishes this; hence, if active it will give practically 100 per cent. of successes. In drying virus on points or quills, each one depends on chance for its activity. It may or may not gather enough material to produce success, and as a rule 70 is a fair average.

Unpleasant symptoms accompanying vaccination are as a rule local, and vary from edema and erythema to actual ulceration and, at times, abscesses elsewhere than at the site of vaccination. This may be understood, for if we touch the skin with a red-hot pinhead, the burn heals promptly. Increase the size of the instrument, say to half inch in diameter, the destruction of tissue is considerable, perhaps the wound is infected, though the instrument is absolutely sterile and sterilizes the skin. The same applies to cowpox vesicle; the greater the area the greater the danger of the crust becoming detached and its base infected. We must not forget that pus-producing organisms normally inhabit the vast majority of human skins; all they need is a proper soil to become active, and this is furnished in the ball of every normal cowpox vesicle. In all branches of medicine, except vaccination, we have a dosage. In other words, with few exceptions we do not think of giving as large a dose of medicine to a child as we would to an adult, yet some place as large a vaccin vesicle on the arm of an infant as on a man. Glycerinated vaccin lymph is very concentrated. It bears the same relation to the old-fashioned ivory point per quill as morphia bears to the older forms of opium. Hence the dose applies here. Regulate the size of the scarification—to a child up to five years a single scratch about one-eighth to one quarter inch long suffices; up to 12 years, four lines crossing a spot one-eighth inch square; for an adult, three to four lines involving a quarter inch square. One typic vesicle the size of a split pea affords as much protection as a dozen. Whatever form you use, remember the production of vaccin virus is not an exact science. We are not dealing with a fixed drug, but with a biologic product with many unsolved problems. An active virus presupposes the presence of a living organism, whose length of life can not be predetermined any more than a human life. The rule adopted by life insurance companies, of averaging, is therefore the only one that can be applied here. It is one of the few medicinal preparations in which the results are visible, and it therefore impresses itself upon the observer as either good or bad, in a vivid manner.

Philadelphia Pathological Society.

Meeting of March 23, 1899.

Dr. A. C. ABBOTT presented a paper to the society, entitled

THE RELATION OF THE BILE TO INFECTIOUS DISEASES.

He stated that the bile outside the body was only feebly germicidal, and in infectious diseases that obtained from the gall-bladder was frequently found to store up bacteria which remained pathogenic long after they had been destroyed in other portions of the body. However, it must be true that the bile has some effect in limiting putrefaction in the intestinal canal, because in suppression of this fluid the feces are highly putrefactive; therefore it has some antiseptic influence. Being feebly germicidal, it has been a question as to which ingredient of the bile had the greatest influence in this respect; but more recently this has been ascribed to taurocholic acid. The bile has been proven to contain antitoxic properties, as shown by injecting the venom of snakes into animals and subsequently bile, which to a limited extent had the effect of counteracting the effects of the poison. In typhoid fever the colon and typhoid bacilli have been found in the bile long after the abatement of the disease. This is, however, due to the fact that the condition of the bile has been altered by the disease.

Probably one reason more definite knowledge has not been obtained in regard to this secretion is that investigators have generally regarded it as an inert substance, and have not taken the precautions to procure it in the way that other vital fluids have been obtained, such as the blood, for instance. From this fact many errors have occurred from experiments with bile.

Dr. JOHN B. DEAVER read a paper on "Inflammation and Diseases of the Biliary Passages and Gall-Bladder," to be published in the JOURNAL.

Dr. JOSEPH MCFARLAND presented statistics of the autopsies in which gall-stones had been found, as observed in various parts of the world. In 4300 autopsies one writer had found gall-stones 270 times, another, in 2300 autopsies, met with them 166 times. It had been proven by observations made post mortem that obstruction and perforation of the bowels was by no means an uncommon occurrence in persons who suffered from gall-stones.

Dr. WM. L. COPLIN quoted from Posey, who in one case of obstruction of the biliary passages found a polypoid growth situated in the common duct. Echinococcal cysts had also been found to give rise to obstruction of the bile-ducts. Regarding the condition of the bile in infective diseases, he

thought the important features would be hard to determine, from the fact that micro-organisms had been found to be in a dormant condition in this fluid over long periods of time. In obstruction of the portal circulation certain writers had reported as having met with multiple hematomata of the abdominal wall.

Dr. JOHN P. ARNOLD spoke of the antitoxic action of bile as observed in experiments he had made upon frogs. He had in certain instances injected strychnin into frogs and at the same time injected in other portions of the animal bile derived from frogs, and found that the poisonous effects of strychnin had been counteracted by that of bile, while in control animals the drug exerted its usual potency. He had also used ox bile in the experiments made upon frogs and found that it had less influence in arresting the symptoms of strychnin poisoning than when frog's bile was used. In the experiments in which bile from the frogs had been used, he had been unable to recover any strychnin from the animal's body.

Dr. BEATTIES called attention to the fact that the bile which had accumulated in the gall-bladder was of a distinctly different character to that found in the common bile-duct, bilirubin being the principal coloring agent in the fluid from the latter region, while biliverdin gave the color to the fluid in the gall-bladder.

Dr. ALONZO TAYLOR mentioned a case treated by the late Dr. William Pepper in which a fatty growth had formed at the head of the pancreas, giving rise to obstruction of the biliary passages.

Dr. W. E. HUGHES spoke of the pain present in biliary colic, while many writers had stated that at the onset pain was located in the epigastric region, thence radiating to the right hypochondrium and right shoulder; he had seen a case in which the severest pain originated in the epigastric region, radiating to the region of the precordia, left shoulder and arm, simulating in many respects angina pectoris.

Dr. ALBERT WOLDERT stated that in several cases in which patients had suffered from biliary colic he had noticed that no pain had been referred to the region of the right shoulder. Regarding the pathologic condition, which might be present in long standing cases of biliary calculi, he referred to statistics presented by Christian Fenger, who had stated that the gall-bladder on being constantly irritated by hard particles, such as calculi, might in time become so small as to become almost obliterated from cicatricial contraction.

Dr. JOHN B. DEAVER, in closing the discussion, stated that there were many circumstances which might cause a surgeon to change a preconceived opinion regarding the special operation to be performed. On the whole, he was much opposed to the use of mechanic devices in operations upon the gall-bladder. He did not approve of cholecystenterostomy, much preferring the establishment of a biliary fistula.

Philadelphia County Medical Society.

Meeting of March 22, 1899.

The regular order of business was suspended in order to permit the introduction of a resolution by Dr. JAMES TYSON, demanding the immediate filtration of the water supplied to Philadelphia. The resolution was carried unanimously.

Dr. JOSEPH HEAD read a paper on

LANCING THE TEETH AND CARE OF TEETH DURING ILLNESS.

He said that in giving acid drugs during disease, the only way to prevent injury to the teeth was to rinse the mouth subsequently with a solution of bicarbonate of soda. Giving the drug through a glass tube did but little good, since the acid solution again found its way around the base of the teeth, where it did harm. Regarding the philosophy of cutting the teeth, when one or two teeth do not come through in a limited time they exert a backward pressure upon the nerves, giving rise to severe pain and manifested by manifold symptoms indicating impairment of health to the child, and should, therefore be incised by a physician. It is practice to make a crucial incision in the case of the molars and a linear incision in the case of the incisor teeth. It is of special importance to cut down upon the teeth, going through the deeper structures until the edge of the bistoury rests upon the upper edge of the enamel. He disapproves of the use of rubber rings, thimbles, pennies, etc., as a slow method of aiding nature in overcoming the resistance of the gums.

Dr. J. P. CROZER GRIFFITH did not agree with the speaker in the method advocated, because he thought many of the ailments of children attributed to teething arose from wholly independent causes than teething, and he was opposed to lancing the gums to aid the tooth in coming through.

Dr. W. J. TAYLOR thought incising the gums often did good in hastening the process.

Dr. MORDECAI PRICE thought that more teeth were lost by lancing than by any other method of treatment, because in using a sharp instrument the enamel would be injured, thereby leading to early decay of the tooth.

Dr. E. B. FERGUSON of Troy, N. Y., read by invitation a paper entitled

CYSTS OF THE URACHUS.

He said that nature might be deficient in two ways in the development of the human species, either through omission or commission. In the embryo the bladder and alantois were almost of the same size, but later the bladder became enlarged, while the alantois became obliterated. In some instances, however, this obliteration did not wholly take place, but the canal might be left open for a certain portion of its course and hence become dilated to such an extent that a large tumor might be formed. Probably the most common condition was to find the umbilicus patulous. The fluid from a cyst of the urachus is of low specific gravity, resembling that of a parovarian cyst. In nearly all instances cysts of the urachus were situated extraperitoneally. Dr. Ferguson had operated upon a case of cysts of the urachus occurring in a man 47 years of age. There had been a gradual loss of flesh and strength, frequent urination and pain in the lower abdominal region. At this time a small tumor was detected. On palpation it appeared to be flat, hard and quite superficial, as if situated in the abdominal wall. At the onset of the tumor he believed it malignant. At the operation it was found that instead of being flat it was globular, and what had given the impression of the former state was, in fact, due to the recti muscles, which, in this region, were very tense. After anesthesia, relaxation of the abominal muscles occurred and the mistake was noted. During the early part of the operation it was thought that the tumor might be a greatly distended bladder. Probably two to four quarts of fluid were removed. The dissection was begun by first removing the lining membrane of the sac on its lower posterior surface. Nearly the entire lining was removed, only leaving that portion at the umbilicus where there were deep digitations of cribriform type. After several weeks that portion about the umbilicus was allowed to become infected for the purpose of forming a firmer cicatrix in this region. In looking over the literature on the subject he found that Tillman had reported fourteen cases of cyst of the urachus.

Dr. W. W. KEEN stated that he had never seen a case of cyst of the urachus and complimented the speaker upon his good results. He thought that stripping the lining of the sac was a good procedure and would try the method should he be called to operate upon the pancreas.

Dr. REISMAN had seen a dilated urachus in a man, and in children had seen instances in which the urachus was partly open.

Philadelphia College of Physicians.

Section on Ophthalmology, March 21, 1899.

Dr. JOHN T. CARPENTER read a paper on

BILATERAL EXTENSIVE CHOROIDAL HEMORRHAGE IN THE MACULAR REGION.

The patient was also shown and presented the following history: age 45, two miscarriages, general health good except occasional attacks of bilious headache accompanied by nausea and vomiting. About fifteen years ago an oculist prescribed concave glasses which seemed to give some relief, but there was still a blur in the right eye. Objects across the street were altered in shape, generally being crooked or bent. The left eye proved to be in a condition of myopic astigmatism with evidences of former hemorrhage. In the right eye subretinal hemorrhage can now be seen.

Dr. S. D. RISLEY thought the case one of considerable interest as affording an opportunity of studying the condition at different periods of its existence.

Dr. JAMES THORINGTON reported a case of

CONGENITAL COLOBOMA OF THE CHOROID AND IRIS

in each eye without involvement of the lenses. In Miss F. C., aged 18, vision in right eye $\frac{6}{30}$, left $\frac{6}{15}$; ophthalmoscopic examination showed coloboma of choroid with indistinct vessels and pupils dilated. In all respects the condition seemed to be congenital. There was no history of coloboma in the family. This case evidently shows that coloboma of choroid does not necessarily mean coloboma of lens.

Dr. GEORGE DE SCHWEINITZ reported a case of double coloboma of the choroid.

Dr. S. D. RISLEY read a paper on the

LATE RESULT IN IMPLANTATION OF SPONGE IN THE ORBIT AFTER ENUCLEATION.

He referred to a paper read by himself before the American Pathological Society in 1898, in which he had followed this procedure, after which the sponge had become absorbed and the cavity filled with new tissue. This case was now presented with a false eye, which seems to fit accurately. However, on the whole, it is not a desirable operation.

Dr. RISLEY also read a paper on the

EMPLOYMENT OF THE KALT STITCH IN CRITIC CASES OF CATARACT EXTRACTION.

Up to this time he has made use of this in three cases in which the lenses were hard to extract, and has found it of great service. In two cases there has been considerable prolapse of the vitreous, which had been returned, vision subsequently being moderately fair, one being ⅝. The needle he uses is very short, sharp, and curved, without cutting edges. The finest silk suture is best. The greatest danger from the use of any stitch in this region is from infection, but in his experience there has so far been none.

Dr. RISLEY'S third paper referred to

FIXED SEGMENT OF THE IRIS, WITHOUT SYNECHIÆ AFTER IRITIS.

There had been an exacerbation of iritis on October 22, last, and still later an attack of parenchymatous form of the disease, The vision went back to ⅝. After the attack it was found that the nerves of the lower portion of the iris had been paralyzed. A gelatinous mass was found in the lower left quadrant of the pupil, the latter being kept in a condition of dilatation. There might have been some adhesions back of the iris, but these could not be demonstrated.

Dr. GEORGE DE SCHWEINITZ read a paper on

FISTULA OF THE ORBIT DUE TO DISEASE OF LACHRYMAL DIVISION OF ETHMOIDAL CELLS.

The patient was 19 years of age, unmarried, and family history negative. For quite a long period there has been a discharge of pus into the region around the middle meatus of the nose. Two probes were inserted into the mouth of the fistulous nose and passed upward, one into the lachrymal division of the ethmoid cells, the other into the posterior division. A considerable amount of pus was evacuated. The tract was thoroughly curetted, during which operation some necrosed bone was removed. A rubber tube was inserted and left for some time, but this was subsequently removed to be replaced by a stylus, which was allowed to remain for a period of four months, effecting a complete cure. Dr. De Schweinitz thought that fistulous tracts in this area were very frequently the result of disease of the ethmoid cells.

Dr. WM. ZENTMAYER spoke of a similar case to that reported by Dr. De Schweinitz. In this instance the fistulous tract had been a sequel of scarlet fever.

Dr. JAMES THORINGTON also reported a case in which there had been obstruction of the lachrymal duct, following a blow, suppuration subsequently developing, for which an operation had been performed.

Dr. ZENTMAYER reported a case of tumor of the orbit, with secondary involvement of the submaxillary, axillary and inguinal glands. This condition had developed in a child, the subject of hydrocephalus. Choked disc had been present in the right eye and marked neuritis in the left.

Dr. G. C. HARLAN spoke of

ABSCISSION AND COMBINED KERATECTOMY.

Regarding this method he thought it had more recently become neglected from the fear of development of sympathetic ophthalmia, a rare condition now with asepsis.

Dr. H. F. HANSELL reported a case of a typic retinitis pigmentosa, in which the patient suffered from night blindness.

Practical Notes.

Liniment for Articular Rheumatism.—Glycerin 30 gm., camphorated alcohol 30 gm., ether 8 gm., chloroform 10 gm., tinct. opium 3 gm. Apply and wrap in cotton.—Decoopman, *Echo Méd. du Nord*, February 26.

Lubricant for Sounds.—Tragacanth 2.5 gm., glycerin 10 gm., 3 per cent. solution of carbolic acid 90 gm.; triturate cold. This combination produces a cold cream, dissolving in water. A sound, coated with this cream and dried, cleanses itself by simple immersion in tepid water.—O. Kraus, *Progrès Méd.*, February 11.

Lesions of Lachrymal Ducts and Nasal Affections.—B. Bischawy has noted that many cases of chronic affections of the lachrymal ducts are caused by compression from hypertrophied bone or muscle in the nose, and are cured by removal of the hypertrophied tissue.—*Vienna Klin. Rund.*, February 19.

Addition of Quinin to Prevent Salicylic Intolerance.—Decoopman treated a case of recurring acute articular rheumatism with marked intolerance of sodium salicylate, with a combination of salicylate of lithin, .5 gm., to sulphate of quinin, .2 gm., arresting an acute attack in four days without an indication of intolerance (total 13 gm. salicylate).—*Echo Méd.*, February 26.

Gargling.—M. Saenger of Magdeburg reports a number of tests and experiments with staining fluids, powders, etc., which have established the fact that only in very rare and exceptional cases does gargling bring the fluid in contact with all the surfaces desired. It does not reach the tonsils nor the back of the pharynx. It is also directly injurious, as it forces the diseased parts to excessive activity.—*Munich Med. Woch.*, February 21.

Hot Baths in Children's Bronchitis.—Professor Jürgensen of Tübingen has been very successful in treating cases of capillary bronchitis in children, with a hot bath three or four times a day or every two hours, followed by a brief cold affusion on the bulbar region. This produces a violent attack of coughing which expels the mucous secretions and relieves the depression. A little wine should be given and the child taken up occasionally. The mortality with this treatment is much lower than with the usual methods.—*Semaine Méd.*, February 22.

Internal Treatment of Urinary Affections.—Salosantal, a combination of a balsamic and antiseptic, ol. santal and salol, has proved very effective in over a hundred cases of disease of the urinary passages reported by L. Hahn of Berlin, and its low price is another point in its favor. It is especially useful in acute and chronic gonorrhea in the male, with cystitis counterindicating local treatment. The effect is marked in a few days and cure complete in two weeks in nearly all of the twenty-five observations described in detail in the *Derm. Ztft.* for February.

Hematology of Cancer of the Stomach.—Recent research on this subject has been published by Hofmann (*Ztft. f. Kl. Med.*, B. 33), Henry (*Cbl. f. In. Med.*, 1839, No. 5), V. Jez (*Vienna Med. Woch.*, 1898, 15) and Heyem (*Presse Méd.*, 1898, August 27). They all agree that, while investigation of the blood does not furnish reliable information in all cases, yet it may prove an invaluable assistance in certain doubtful ones. The most frequent alterations in the blood in case of cancer of the stomach are a marked decrease in the number of red corpuscles, to between two and three millions, and an increase of the white corpuscles to about fifteen thousand; also the presence of nucleated red corpuscles, normoblasts, their deformation or fragmentation, and the absence of digestive leucocytes.

Test for Albuminoids, Alkaloids, Leucomains or Toxins.—Chibret and Izarn describe a new test by which opalescence is imparted to an iodized solution by nearly all vegetable or animal products of a nitrogenous nature, the dilution required varying with each, and the opalescent reaction conspicuously absent in the case of urea and the urates. Three drops of nitric acid are added to 2 c.c. of solution of cocain hydrochlorate at 1/800,000, and well shaken. To this are added three drops of the iodin reagent made by the formula: iodin 47 gm., potassium iodid 58 gm., aq. dest. 60 gm. Normal urine produces opalescence at 1/30 to 1/50, but in morbid conditions the dilution rises above 1/50 and may attain 1/100 or even 1/200. A special illumination is required to distinguish the opalescence.—Paris Academy of Sciences, session of February 13.

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SATURDAY, APRIL 1, 1899.

DIAGNOSTIC CURETTAGE.

In spite of the boasted brilliancy of recent microscopic technic, the friends of diagnostic curettage have not been able to lift this procedure to the plane of scientific acceptation, and even in cases of suspected malignant uterine disease, digital exploration has approval as the best of pertinent diagnostic measures. Curettement as a means of diagnosis can count a few sporadic friends. Its foes are legionary. They may be classified for contemplation into two groups: The first is made up of those gynecologic routiniers, who, in deference to an over-refined sense of delicacy, or from sheer indifference to the less salient details of diagnosis, prefer not to explore the malodorous and unsightly matter vented from the diseased uterus or vagina, and who likewise turn unmindfully from the examination of feces, pus and sputum.

The most prized of scientific riches have been gleaned in exploration of the unpicturesque excreta. The modern medicine of which we haughtily own ourselves disciples has bulwarked itself with facts picked up on excursions of research in sputum, pus and urine. In the feces new worlds of scientific wealth await a heroic COLUMBUS; and in uterine curettings, however homely they may appear to barbaric eyes, there are pathologic pictures which charm the appreciative seeker, and which are of incalculable worth, since they indicate the way to rational therapy.

Another class embraces those who use the utmost pains to gather diagnostic evidence, but who deem the examination of curetted matter to this end a method of small importance—preferring to contemplate the clinical symptoms and to examine locally with the speculum and finger.

Preliminary dilatation of the cervical canal sufficient to allow passage of the exploring finger is not unaccompanied by danger; indeed, fatal shock has been reported as its result. Curettement is the less heroic method, even with the possible attendant risk of perforation and peritonitis. Anesthesia is unnecessary, and with the aid of a rapid method of sectioning and staining, like that of THOMAS CULLEN of Johns Hopkins, the diagnosis may be made at a single sitting. Under some circumstances, as in the case of virgins, narrow senile vagina, elongatio colli or fibroid uterus, digital intrauterine exploration may be impossible. The finger can not always distinguish benign from malignant neoplasms, but the removal of tissue with the curette leads to positive decision. Without the introduction of the finger into the cavum uteri, fragments of endometrium may be removed by the sharp spoon and a decision as to the character of the piece examined may at least be made and, with practice, the condition of the endometrium may be determined with the microscope.

The procedure is indisputably indicated whenever suspicion of carcinoma or sarcoma exists, and this suspicion, it will be conceded, is well grounded, whenever in spite of well-directed treatment, recurring hemorrhages from the uterus present themselves at or near the time of the menopause. It can not be successfully denied that in case of carcinoma, sarcoma and tuberculosis of the uterus, diagnostic curettage is the only measure which reveals the condition, while there is still hope that surgery can save life.

It is probable that a method of examination like diagnostic curettage, which demands of the examiner somewhat more than usual care in the technic of curettement and in the use of the microscope, will not be universally applied; nor need we be hypercritical if, after application of the method by skilful men, some uncertainties of diagnosis still remain. It may still be said with truth, that of all clinically undiagnosticated cases the majority may be elucidated with the microscope by one who regularly embraces every opportunity to examine the normal and diseased endometrium. The experience which one receives in examining normal and mildly pathologic conditions will certainly be of great service when one is called to investigate obscure conditions.

The diagnostic curettement is not more than an auxiliary to clinical and anatomic diagnosis; therefore, he who takes the tissue from the living woman for examination, as well as he who uses the microscope, must have mastered the other and more universally powerful means of diagnosis. The gynecologist and pathologist should, if possible, be represented in the one man. If the gynecologist would meet the universal demand he must be prepared to grasp the knife and operate as well as the general surgeon, and

just so if any gynecologist would be regarded as something more than a routinier, he must at least know the pathology of the organs with which he deals as well as does the general pathologist.

JAUNDICE IN ACUTE INFECTIONS.

The occurrence of jaundice at some period during the course of many of the infectious diseases is a matter of common observation. Of these, malaria, particularly the estivo-autumnal variety, typhoid and typhus fevers, yellow fever, and the septic processes, septicemia and pyemia, offer the usual and typic examples. For convenience of classification it has been the custom to divide the ordinary forms of jaundice into two classes: 1. The hematogenous, which occurs when the specific germ or the products of its manufacture causes such excessive destruction of the red blood elements that the liver is totally unable to perform the increased amount of work imposed upon it, that the product of this red corpuscular destruction, bilirubin, becomes to some extent reabsorbed by the lymph and blood-vessels, and the characteristic discoloration follows. In these cases, and this fact is an important one, the urine contains but little bile pigment, and the stools are not clay colored, showing that a normal amount of bile reaches the intestinal tract. 2. The so-called hepatogenous or obstructive jaundice—and the obstruction may be located in either the small or large ducts—may be due to obstruction within the lumen, in the wall, or without the wall of ducts of any size, though naturally the smaller the lumen of the duct the greater the number that must be involved to produce a tangible symptomatology. It may also be due to gall-stones or parasites, tumors either of the ducts themselves or of neighboring organs, stricture or inflammation either of the lining of the duct or of the duodenum.

It has been the custom to assign the jaundice occurring in the infectious diseases above enumerated to the hematogenous division, for unquestionably large numbers of red corpuscles are destroyed during the course of these diseases, as shown by counting the corpuscles and by the hemoglobin estimation. In malaria the writer has frequently found the reds reduced to between two and three million, with the hemoglobin ranging from 40 to 60 per cent. But while mild forms of jaundice may be dependent upon destruction of the red corpuscles alone, it is but natural to look for other factors when the infectious disease is complicated with very deep jaundice, nor is the explanation hard to find in view of modern research.

The liver, in addition to its many other important functions, may be looked upon as a most efficient health officer to the general circulation. It has long been known that many drugs, particularly alkaloidal products, when introduced into the stomach, are questioned and quarantined when attempting to slip past the liver and enter the circulation beyond, so that the therapeutic law of diminished dosage hypodermically was gradually deduced. Recent experiments by FUTTERER have shown that micro-organisms, when introduced into the portal circulation, are eliminated by the liver with great rapidity. ADAMI has demonstrated a bactericidal function of the liver. Many other investigators have proven that in the various infections, the specific micro-organism, when known, may be found in the liver. Under ordinary circumstances, in health the liver is able to attend to all organisms that may come from the gastro-intestinal tract and speedily secure their elimination. But in disease, as in typhoid fever, where the resisting power of all the tissues is below par, and where the organisms received are in larger dose and of greater malignancy, the liver is inadequate to the excessive demands made upon it. Some of the organisms enter the general circulation; the remainder, either by their own action or that of their ptomains, rapidly produce inflammation, and the presence of the inflammatory products prevents the ready escape of the bile. In addition the bile-ducts themselves may become subject to the inflammation, and the viscidity of the bile due to this cause, together with the tumefaction of the lining membrance of the ducts, also a result of inflammation, will tend still further to obstruction; in other words, there will be an obstructive jaundice in addition to a hematogenous one. The amount of obstruction, and of jaundice, will depend upon the extent and virulence of the inflammation—but it is improbable that the inflammatory reaction will be so great that no bile will be permitted to escape, so that the stools will be more or less bile-stained. The obstruction present determines the amount of bile pigment in the urine and, vice versa, an estimation of the amount of urinary biliary pigment is a good register of the amount of obstruction.

A DIRECTOR-GENERAL OF PUBLIC HEALTH.

It will be gratifying to the many friends in the United States of Dr. FREDERICK MONTIZAMBERT, the distinguished superintendent of quarantine of Canada, and former president of the American Public Health Association, to learn that he has recently been appointed director-general of public health of the Dominion of Canada, with the rank of deputy minister.

With the example of our neighboring republic on the South, which has long since intrusted the sanitary interests of Mexico to the Consejo Superior de Salubridad Publica (Superior Council of Public Health—a National Board of Health), of which Dr. EDUARDO LICÉAGA is president, also an ex-president of the American Public Health Association; and now on our northern boundary, that of a director-general of public health, whose office is but a degree below that of a

cabinet minister, it may be hoped that Congress will no longer delay establishing a National board of health for the United States on the lines suggested and earnestly advocated by the AMERICAN MEDICAL ASSOCIATION, the American Public Health Association, the State boards of health, the New York Academy of Medicine and other influential bodies of physicians and sanitarians. It is not creditable to the intelligence of this country that there should be absolutely no responsible organized department of health in its government, empowered to treat with foreign nationalities, especially those immediately adjoining it, on questions relating to the importation and exclusion of contagious diseases that may become epidemic. Now that the great focus of yellow fever has practically come within our own geographic limits, these countries will naturally look to this Government for provisions for the prompt extinction of this plague-spot, so long the opprobrium of Spain, but beyond a makeshift recourse to a bureau intrusted with the care and treatment of sick and disabled merchant sailors, a sufficiently large responsibility for any one office, we have no means of preventing its introduction and spread among our own exposed populations. There is no health organization of a distinctively national character. The several independent State boards of health are able and efficient, but they are not correlated and they themselves recognize the need for a common executive board and have repeatedly urged upon Congress that such should be provided. The two great representative bodies of the physicians and sanitarians of the United States, the AMERICAN MEDICAL ASSOCIATION and the American Public Health Association, have agreed upon a measure which they believe will satisfactorily accomplish this object, and have appointed committees of their members, all men charged with the sanitary responsibilities of widely distant localities of the country, to personally urge upon the President and Congress the danger of longer delay in creating a National department of health, with power to act under the emergencies that are every day so fearfully imminent. The recent act of the Canadian Government in instituting such a department encourages the hope that early in the approaching session of the new Congress, legislation to this effect may be enacted.

MULTIPLICITY OF MEDICAL SOCIETIES: CONSOLIDATION THE NEED OF THE HOUR.

Of the utility of organization, and of that special kind that is exemplified in the medical society, there can be no shadow of doubt. In union there is power and in well directed organization progress. The tendency of the day is toward centralization rather than the opposite, and it is from this point of view that we wish to say a few words, suggestive rather than conclusive, with regard to the waste of energy, time and resources entailed upon the medical profession by reason of the existence and continued organization of what appear to us unnecessarily large numbers of medical societies.

Thus, we have several organizations of national scope and membership; in most commonwealths, State medical societies, and in the counties, cities and towns thereof, usually local and constituent bodies. In the large cities, as for instance Chicago, New York and Philadelphia, there are often several individual bodies whose work and membership are of a general and similar character, and, besides, a large number with independent organizations devoted to the special departments of medicine; not including the intramural collegiate societies that exist in some places almost without number. There must thus result a considerable waste of time, energy and money, and it seems that with such a division—one might say dissipation—of forces, the influence for good that the constituent membership would otherwise be capable of wielding must be materially attenuated.

It is in this spirit that we beg, therefore, to make a plea for consolidation, for a union of forces, that the greatest good may inure to the largest number. Why need there be more than one great national, American medical body—as there is but one great national British medical body—with the organization of sections in all of the departments of medicine? Each State and Territory would also require but one central organization, and one society would suffice for each county, with as many special and geographic divisions and branches as the exigencies of the individual case would demand.

The difficulties of such consolidation and reorganization as we suggest are not insurmountable; the details could easily be arranged, and the result, if consummated, would unify and strengthen the medical profession as no other measure is capable of doing. With such a united body the cause of preventive medicine would be greatly forwarded. Besides antivivisection and antivaccination, there will be other battles to be fought for the public welfare, and divided forces will fail where united influences must prevail.

TREATMENT OF DYSENTERY.

In the present state of knowledge, dysentery can scarcely be looked upon as a specific disease. Pathologically it may be considered a form of colitis of varying degree and extent and dependent upon a number of exciting causes. Thus, there have been described catarrhal, tropic or amebic and diphtheric varieties. The symptomatology has been rather more uniform, the distinctive clinical manifestations being frequent, small, sometimes ineffective stools, containing often mucus and blood, together with tormina and tenesmus.

Recovery may take place spontaneously. The best treatment consists in the removal of the offending

cause and the restoration of the bowel to its previous condition. For this purpose magnesium sulphate has proved useful, as has also irrigation of the bowel. Other remedies of repute are ipecacuanha, which has found great favor among the physicians of British India, and mercuric chlorid. A single large dose of mercuric chlorid may be given at the outset in conjunction with the employment of magnesium sulphate; the ipecacuanha may be guarded with small doses of opium; and quinin or tannic acid or potassium chlorate may be cautiously incorporated into the irrigating fluid.

An interesting clinical contribution to the treatment of dysentery is made by DAY (*British Med. Jour.*, Feb. 4, 1899, p. 271) who reports the results obtained in 60 cases of dysentery, 25 of which were treated with ipecacuanha and 35 with magnesium sulphate. The former was given, freed from emetin, in ten-grain doses, every two hours, with one grain of opium twice daily, and in some cases with solution of mercuric chlorid every four hours. Of magnesium sulphate a dram or more may be administered three or more times a day. Among the 25 cases treated with ipecacuanha there were 9 deaths, 32 per cent.; while among the 35 cases treated with magnesium sulphate there were but 2 deaths, 5.7 per cent.—but one of these patients had previously received the ipecacuanha treatment and had indulged in an indiscretion in diet. Further, recovery under the ipecacuanha treatment was slow and relapses were frequent, while under the magnesium sulphate treatment recovery was rapid and complete. The number of cases here considered is not so large as in itself to justify a final conclusion, but taken together with other evidence it goes to strengthen the confidence that clinicians have already learned to place in the eliminative method of treating dysentery, and especially with magnesium sulphate.

WHERE IS THE COLLEGE-MADE MAN?

A Philadelphia paper recently contained the following paragraph, which is deserving of some comment:

Andrew Carnegie having recently asked: "Where is the college made man?" the superintendent of schools in Sioux City, Iowa, has directed a systematic search for the missing individual, with no little success. A canvass of the leading men in the following named professions and occupations in the principal towns of Iowa gave these results, which are published in the *Educational Review* for March:

Profession.	Whole number canvassed.	College bred.	Per cent.
Ministers	67	60	90
Teachers	65	55	85
Lawyers	78	53	68
Doctors	85	52	60
Bankers	66	26	40
Editors	53	16	30
Merchants and manufacturers	119	31	26

The position of the medical profession in the above is not as satisfactory as one might wish, but it puts it fairly in the category of the learned professions, there being a long step between it and the next below. There is no good reason, however, why doctors should have, to any extent, less general education than lawyers, and with modern tendencies in professional education, it is very possible that their respective positions may be reversed in the near future. The low percentage of editors in regard to college education is somewhat of a surprise at first sight, but further investigation would probably not change the above conclusions.

INSURANCE OF VEGETARIANS.

We have had in this country sectarian insurance companies, both religious and medical, but we believe that they have not been long-lived; certainly none of them have been brilliant successes. We may have more from time to time, but they will all have to undergo the tests of hard business experience. It is said that at the present time there are several life insurance companies in England that take vegetarians at reduced rates, considering them as better risks. With the views now held on this subject by the highest physiologic authorities, this would seem a doubtful business venture, but the experience of these alleged companies, if this policy is constantly followed long enough, ought to be an interesting practical experiment. All the other possible elements will have to be duly estimated to make it of any real value, but this, it is assumed, will be the case.

OVARIAN GRAFTING.

The old question that sometimes puzzles juvenile casuists as to whether the hen that laid or the hen that hatched the egg is the mother of the chick, may yet in the progress of surgery have its parallel in the human species. In fact, there is a remote possibility that interesting medicolegal questions may yet arise as to the proper maternity of individuals, a question that has been hitherto restricted to the paternal ancestor. Dr. R. L. MORRIS, in a recent work, republishes the account of two cases out of a total of five operations in which he has transplanted the ovary in the human female and in which functional results followed. In one, a woman became pregnant from the action of a piece of ovary grafted into the fundus uteri, and in the other an undeveloped young woman with seemingly rudimentary sexual organs, took on an apparently normal sexual life after implantation of a piece of ovary from another woman. KNAUER has more recently successfully grafted ovaries in the rabbit and seen pregnancy result and go to term, and MORRIS' case, while the pregnancy was early interrupted, is almost as conclusive as to the possibilities in the human subject. The fact that out of five operations he had two such striking results ought to be suggestive to future operators. The operation is apparently practicable, and it is easy to see that it may have its utility and be an advisable one in certain cases, but if it should become a popular one, we will have to look out for some interesting tangles of heredity.

LEPROSY IN MINNESOTA.

The "Biennial Report of the State Board of Health of Minnesota" has just been published, and among other interesting features, it contains a discussion of the subject of leprosy in that State. It has long been known that owing to the large proportion of Scandinavians among its immigrants, Minnesota has become a sort of local center for this disease, and, according to the report, there are at present thirteen and probably sixteen known lepers in the State, of a total of fifty-one that it is known have been or are now resident. It is believed there are also a few unrecorded cases, and in all probability there are at least twenty, and some claim even as high as fifty, lepers now living in Minnesota. Allowing that there are only twenty, it is assumed on the basis of the late census that there is probably a like number in each of the four adjoining States of Wisconsin, Iowa, North and South Dakota, with a probable total of 150 Scandinavian lepers in the United States. It would be of decided interest if the same care taken in Minnesota was taken in other States to ascertain the facts in this respect. If there is any real endeavor to stamp out leprosy in the Northwest, it would seem that it would have to be with concerted action of all these States and the general government. Many of the points made in the report referred to have been already printed (vide JOURNAL, Oct. 22, 1898), but its official publication will serve to call attention to important facts that require some general action on our part to rid ourselves of what is to some extent at least a public danger.

PAVEMENTS AND DISEASE.

The attention of sanitarians is respectfully directed to a possible cause of urban morbidity in the pavement of streets. Well-paved streets are generally considered as conducive to health as favoring cleanliness, but the question might be raised whether there is not in this case, as in other mundane matters, a reverse side of the shield. Dirt roads may be considered in a sense antiseptic, at least they carry out the principle of dry-earth disinfection the greater part of the year, and for the remainder the germs are smothered or frozen in mud or in one way or another put *hors de combat* for most of the time. On a solid pavement, and especially one that is as reasonably clean as is possible under urban conditions, disease germs there deposited are the sport of every breeze that blows, and are wafted into the eyes, ears and air-passages of every passer-by. The danger may not be great, but with all the multitudinous sources of microbic infection that are concentrated on city streets, it can not be denied that it exists. The character of the pavement may also have to receive some consideration, a soft, bibulous one, so to speak, like wood, may be more dangerous in some respects than a hard stone or asphalt one, and vice versa. The actual relative danger of each kind under each special condition is worth some consideration. These points are not specially new, in fact, they are old, but they are suggested by the newspaper reports of the recent utterances by the health officer of one of our cities Dust and disease are often enough mentioned, but the special conditions that favor the combination are less often the subject of thought or comment. Once in a while some fact bearing on this question may have an important significance with reference to individual or general morbidity.

PASSING OF PRESCRIPTIONS.

It appears to be a fact that the prescription business of druggists is lessening in this country; as much as 50 per cent. is the estimate of the author of a paper recently read before the Maine Pharmaceutical Association and published in the *Pharmaceutical Era*, March 9. He does not discuss the reasons for this fact, which are, perhaps, more obvious to medical men than to pharmacists, but dwells at length on its disadvantages, as it is natural he should. His paper, however, is not altogether a labored *ex parte* plea, for it contains a number of points that are worthy of consideration.

Leaving aside the occasional necessity of the physician being his own dispenser, especially in country practice, the unreliability of many druggists, a fact made known by experience to many physicians, the introduction of the tablet triturates, and the various granules, parvules, etc., which, with some objectionable and many valuable features, have apparently come to stay among us; leaving out all these, together with others that might be mentioned, there are still good reasons for regretting the disuse of the prescription, and some of these are fairly stated by the writer referred to above. It must be admitted by all that the physician who can readily compose a really good original prescription, for whatever ailment, is a higher grade man in some respects than one who is not thus qualified, and it can not be denied that with the use of all the modern facilities for self dispensing, this accomplishment of ready prescription-writing is becoming to some extent a lost or disappearing art. It indicates too often, it is to be feared, a lessened familiarity with materia medica, which in itself is an indication of medical indolence or lack of study. The old, much-abused, polypharmacy of the shotgun prescription was in some regards less evil in its tendencies than this.

It is doubtful whether the medical profession can ever dispense with the qualified pharmacist by dispensing its own drugs. This being so, whatever tends to degrade or render *functus officio* the pharmacist is liable to have its recoil on our profession. It is for our interest as well as the druggists' that such an outcome should be averted. The dignity of the medical profession, whatever we may say about it, is also somewhat compromised if we are to be apothecaries as well as physicians, and to some of our clients we may come to be regarded as only a higher grade of drug peddler—the mercantile rather than the professional side appealing more directly to their mental apprehension. The remedy for all the possible disadvantages lies in our taking a middle course, not discarding the good there may be in controlling the

administration of our remedies, not giving up the aid we have had in the past from the dispensing pharmacist. And above all we should, as members of a learned profession, seek to never lose any prestige given by the time-honored customs of the past. The physician of to-day should be able to prescribe as well as be, in a fashion, his own compounder.

STATE MEDICAL EXAMINATIONS OF 1898.

The February *Bulletin of the American Academy of Medicine*, contains some interesting tables of the number of graduates of the different medical colleges that passed the State examinations in twenty-six States where such a test is made a condition of the right to practice medicine. An analysis of these tables affords some few surprises, though, as a rule, the facts are what might be expected, and some of those that appear otherwise are capable of explanations. For example, one homeopathic institution has no failures of its graduates to pass, in these tables, and, therefore, at first sight, makes an excellent showing which, however, is qualified somewhat when we find that thirty-one out of thirty-two of these graduates passed in the State where the college is located and before an exclusively homeopathic board of examiners. Since no other institution has so favorable a showing, these facts appear the more significant.

Quite a large number of medical schools, nearly one-fourth of the whole, are not represented by any examinations in the tables, their output, presumably, going entirely to States where examinations are not required, or at least none happened to apply in 1898. Nearly one-half of the remainder are represented by less than half a dozen graduates, so that there remain only a little over seventy colleges that are fairly represented. Of these only seven have a perfectly clear record, all their graduates having passed the examinations, though a number of others barely escaped it, with only one failure. One of these has already been noticed. The University of Minnesota makes a good showing with twenty-five graduates, all passed, and next comes Trinity College Toronto, and the Medical College of the State of South Carolina, with twelve each. These institutions have, however, but a comparatively small number of representatives before the examining boards, and cannot be fairly compared to those with a very much larger number and with a correspondingly larger chance of failures.

The foreign institutions appear to have fared as badly before the examiners as the native schools, their proportions of those not passed averaging fully as high. The tables are, on the whole, encouraging to us as Americans, but we must remember that in our own schools the examinees were, as a rule, fresh graduates, while the foreigners were presumably older and may have become rusty in some departments.

It is hinted that similar tables will be an annual feature in the *Bulletin* and that in future they will be made more complete, giving data that will be still more valuable in estimating the rating of the various colleges. At present many points suggest themselves affecting this question—the age of the diploma, the influence of locality and many others. Some of these may be really of little actual importance, but others are certainly deserving of consideration.

Medical News.

DR. WILLIS O. NANCE, Chicago, has accepted the professorship of ophthalmology in the Chicago Clinical school.

A JOURNAL consolidation of The *Kansas City Medical Index* and the *Kansas City Lancet* is announced. Dr. John Punton assumes editorial charge.

THE FRENCH MEDICAL PRESS ASSOCIATION is organizing an International Congress of the medical press, to meet at Paris in 1900.

PROFESSOR TSCHIRKOW of Kiew was recently shot in the left lung by a companion on a hunting expedition, but is apparently recovering.

DR. J. T. DUNN, Louisville, Ky., has resigned from the faculty of the Kentucky School of Medicine, of which he has for several years been a member.

Dr. GEORGE N. WATSON of Cleveland, Ohio, left recently for Rosewell in the Pecos Valley, New Mex., where he will in the future reside. Ill-health compelled change of climate.

DR. W. W. KEEN of Philadelphia has been elected chairman of the committee which has for its object the raising of the permanent endowment fund of the College of Physicians to or above $50,000.

DR. JOHN MITCHELL, of the Medical Department of the University of Pennsylvania, class of '84, is serving with the Ninth United States Volunteer Infantry, in Cuba, as surgeon, with the rank of major.

DR. S. W. REID, the retiring surgeon-general of the National Guard of Pennsylvania, which position he has held since 1870, was recently tendered a dinner by the Union League Club of Philadelphia. Among others present were three ex-governors of the State, under whom Dr. Reid held office.

THE OHIO SUPREME COURT has sustained the State board of medical registration on a mandamus case brought against it by an unqualified practitioner. This settles the question as to the status of illegal practitioners in that State and relieves the State board from the annoyance of future similar mandamus suits.

DR. SIMON FLEXNER of Baltimore, who recently accepted the professorship of pathology in the University of Pennsylvania (vide JOURNAL, p.681), with Dr. L. F. Barker of the Johns Hopkins Hospital, sailed from Vancouver, B. C., on the *Empress of India*, March 27, for Manila, where they will spend some months in the study of tropic diseases.

SECRETARY OF STATE HAY has appointed Dr. J. M. Baldy, Philadelphia, delegate to represent the United States at the next meeting of the International Congress of Gynecology and Obstetrics, to be held in Amsterdam, August 9 to 12 inclusive. It is also announced that delegates will be sent from New York, Washington, Chicago and Boston.

A LAWYER in Tennessee has sued a druggist for damages caused by wood alcohol in a preparation

ordered as a foot wash, but utilized as a beverage. As the *Pharmaceutical Era* says: "Aside from the interesting legal points involved in this case there stands out prominently the fact that foot washes can not be safely used as beverages." The druggist's money ought at any rate to be safe in this case.

TWENTY-SEVEN members of the profession in England (*Revue Méd.* March 8) have been condemned in court for illegal procedures during the past year. This does not include the Nugent case, in which a man rented the diploma and instruments of a physician who had deserted his family and gone to Australia. The wife was paid a certain small amount weekly for the use of her husband's name and credentials.

SELLERS of pure butter, in Philadelphia, have been procuring evidence against those who have violated the State and National laws regarding oleomargarin. The State law absolutely prohibits the sale of oleomargarin, but many of the dealers have paid a special tax to the government to comply with the National law. Over 125 cases, it is stated, have been laid before Internal Revenue Collector McLain and United States District Attorney James M. Beck.

THE NEW ORLEANS BOARD OF HEALTH is reported as having adopted an ordinance making ventilation compulsory, and requiring all householders to open up their houses to the sun and air, especially in clear cool weather. It would be a good thing if the board could also compel the construction of buildings, so as to admit light and air. There are too many flat buildings in our large cities, and some of them pretentious ones, with dormitories where direct sunlight can not enter, and where ventilation seems to have been ignored.

THE OSTEOPATHS have been making a hard fight in Nebraska this winter to get a bill through the Legislature permitting them to practice in that State. The bill was defeated in the Senate last Saturday, a result brought about through the fact that the physicians had unitedly opposed the measure. The registered physicians of the State had organized into a league, and were ready to make a big fight in the House had the bill passed the Senate. The work done in the Senate, however, was sufficient to put a stop to this "fad" legislation.

AMERICAN CHARITY, in an editorial in the Havana *Archivos de la Policlinica*, is expatiated on as the *notable esplendidez* of the free distribution of food to the poor in Havana, "remarkable not only for the quantity, but the quality and variety of the articles," and the prompt supply of bread, quinin and opium to the smaller towns. *La Discusion* states that the American nation has supported over a hundred thousand Cubans during the last month. The great improvement in the cleanliness of the city is also favorably mentioned.

THE ILLINOIS SENATE passed the medical practice act on March 28. As given in the daily press, it requires graduation from (or attendance at two years' lectures in) a recognized medical college prior to taking the examination needed to obtain the right to practice. While special examinations for special practice are allowed, no one will be permitted on such to practice outside of that specialty, and none but those authorized to practice in all branches are permitted to call themselves physicians or doctors. Fraudulent advertising and criminal record may be ground for refusal of permission to practice.

Correspondence.

Relative Merits of Clinical and Didactic Teaching of Medicine.

CHICAGO, March 13, 1899.

To the Editor:—The editor of the *Philadelphia Medical Journal* has spoken vehemently of the usefulness of clinical and the uselessness of didactic lectures in the teaching of medicine. I am glad to see the didactic lecture defended by two such able writers and lecturers as Barton Cooke Hirst (*Phila. Med. Jour.*) and Hobart Amory Hare (*Med. News*). I have recently, somewhere, seen some foreign utterances in behalf of the didactic lecture, and the statement that Virchow disapproved of the disfavor into which didactic teaching seems lately to have fallen. It is undoubtedly true, that at one time didactic teaching was greatly overdone and that there was a crying need of the system of quizzes and recitations. With the advance of medical science, the improvement in the instrumental and chemic means of diagnosis, and the desire for more exactness in all the departments of the art of medicine, the laboratory rose into merited prominence, the hospital ward became the chief center of interest, and the actual contact of the student with the disease about which he was studying became more and more of a desideratum. So great and important were all these factors that the methods and personality of the teacher were utterly lost in the desire of the student to know and to comprehend the thing taught. As a result, clinical teaching became more and more the thing, until it seemed as though the veriest tyro standing beside a hospital patient would be regarded as a greater master in the art of medical teaching than a Sydenham or a Hunter could ever have hoped to be, talking beside a reading-desk. It is a serious question, whether the pendulum has not really swung too far in the opposite direction, and whether we are not making a serious mistake in giving up the didactic lecture. It seems to me that much of the discussion upon this subject is due to erroneous notions in regard to what constitutes a clinical and what a didactic lecture. A clinical lecture is supposedly one delivered in the presence of the patient, who is made use of to illustrate the points of the lecture. A didactic lecture is merely a discussion without the presence of the patient. A clinical lecture is therefore synonymous with an *illustrated* lecture, the chief illustration in this case being the living subject. A didactic lecture may be illustrated or not, the illustrations, however, being always confined to charts, models, experiments, etc. We have all at times listened to clinical lectures that were only clinical in name. For instance, a gynecologic case may have been brought in upon a bed, a few questions asked of the patient lying beneath the sheet and the hour consumed with a didactic discourse upon uterine fibromata. On the other hand, a didactic lecture in ophthalmology, with the aid of a large model of the eye, would really be more of a clinic than an actual ophthalmologic operation which none but the students in the immediate vicinity were able to see. I take it, therefore, that the real, the essential distinction in the relative values of medical lectures is not the presence or absence of the patient, but the use or non-use of illustrations. The discussion, then, concerns itself not about the absence or presence of the patient, not about whether a student can learn more from the living subject (clinic) than from the model (didactic lecture), but about the relative values of the illustrated and non-illustrated lecture and of the illustrations used.

Viewed from this broader standpoint, it will be seen that to give up the didactic lecture entirely would be a fatal mistake. Without doubt an amputation of an arm in a clinic is more impressive and instructive than any sort of a mere description of the same operation. On the other hand, a lucid, complete description of the cause of a typhoid fever, delivered by a

master, with all the precision and enthusiasm of which such an one is capable, will instruct a class of students more than an hour's gazing upon a typhoid patient called into the arena from the wards of the hospital. As it is given to but few men to hold an audience by the power of speech alone, the clinic will always enjoy the greatest popularity with lecturers. The novelty, expectation and curiosity aroused by a clinic enable a dull talker to hold the attention of the largest kind of a class of students. Nay, more, such a lecturer may hold his class, if in his didactic discourse he makes abundant use of pictures, models and other useful paraphernalia. But rare, indeed, is it for a lecturer to be able to keep his students from becoming restless without the abundant use of pictures and models, unless he be a master of his subject, a master of the art of speaking and endowed with an unusual degree of personal magnetism. Given such a lecturer as the latter, however, in some parts of medical teaching, the didactic discourse rises in importance far above the clinical. To follow the full and lucid teachings of Charcot, one did not have to look upon a batch of patients. The clearness, the wealth of illustration and the gradual evolution of the picture being described by the master made the presence of the patient appear almost as an insignificant accessory. When I listened to the glowing and accurate descriptions of Savour, I almost forgot that a patient about to be operated on was actually in the room. As I followed the words of Germain Sée, who sat behind a table while lecturing to his class, and used not a single illustration, his clear, enthusiastic and logic exposition of the uses of drugs in disease did not cause me to regret for a moment the absence of the patient. Undoubtedly, some medical facts can only be learned accurately in the clinic and in the presence of the patient, just as some other facts can only be fully grasped when observed in the experimental laboratory. But there are still other facts or pictures of disease that only a lucid, forceful exposition on the part of a clear headed, clear tongued and enthusiastic lecturer can carry and fix in the minds of the students. It is in connection with the latter that the didactic lecture will always hold its own.

While recognizing the infinite value of clinical and laboratory teaching, it seems nevertheless true to me that the didactic lecture should not be abolished. Not only do certain subjects require the didactic method for their fullest exposition, but the personality of the teacher, his special knowledge, his individual opinions, his whole being as the guide of his class, have a better play in the didactic lecture than in the clinic, and especially more so than in the method of recitations and quizzes, with the aid of a text-book. I maintain that the art of teaching means something more than a mere rehearsal of certain facts between student and instructor. The art of teaching, in its highest expression, involves the personality of the teacher. This is so obvious that I hesitated to refer to it, but it is a fact that seems to have been utterly forgotten by the advocates of the extreme laboratory-clinical methods. The personality of the lecturer can only have its fullest expressions in the continuous, logic, united discourse of the didactic lecture. If the lecturer can not make his personality felt under such circumstances he can rest assured that just by so much is he deficient as a teacher.

Clinical and didactic lectures, then, are not to be weighed so much in the balance, one against the other, as are the relative merits of the teachers themselves, and the relative value of illustrated and unillustrated lectures. All lectures should be illustrated as profusely as possible. Living subjects, as well as models, charts, etc., should all be elaborately employed. If the living subject is not as good as the model or chart, and sometimes it is not, the clinic should take rank behind the didactic lecture. If the laboratory teacher is less lucid, less enthusiastic, less of a master in the exposition of his theme in the laboratory than the lecturer is behind his desk, then the laboratory should rank second to the lecture as a mode of instruction. Every influence should be brought to bear for the good of the student, and as I have endeavored to show, this influence under some circumstances and in connection with certain subjects, can be made more manifest behind the reading desk than behind the sick bed. The teaching of medicine is a matter too large to be decided upon the mere ground of bedside or non-bedside instruction. Until a teacher's individuality ceases to be a factor in the art of teaching, until text-books are more perfect than they now are, until methods of illustration shall have been all brought down to one uniform level, and until students are endowed with all the knowledge requisite to appreciate what they are to observe in the clinic, the illustrated didactic lecture will continue to form a part of the best medical teaching. L. HARRISON METTLER, M.D.

Antivaccination Agitation in Pennsylvania.

PHILADELPHIA, March 21, 1899.

To the Editor:—The organized effort of the antivaccination people culminated recently in the introduction of a bill by the Hon. J. A. Allen, to the Legislature of Pennsylvania (vide JOURNAL, March 25, p. 681) to abolish the compulsory vaccination of children entering the public schools. The measure was hurried through as fast as possible, but by strenuous efforts a final hearing was postponed until March 14, at which time these committees were appointed, and every member of each of these committees promptly appeared and met the opposition on the floor of the House. The advocates of the bill were represented by counsel, a certain O. Beasley of Philadelphia, a layman, N. R. Taylor, and two physicians, one a graduate of the defunct eclectic medical college of Philadelphia, known as Buchanan's College, and one a graduate of the Homeopathic College of Baltimore, both Englishmen, not especially prominent either medically or in other respects. The committees who met them consisted of Drs. John K. Mitchell, chairman, Wm. M. Welsh and Richard A. Clennan, of the College of Physicians of Philadelphia; next, Drs. James C. Wilson, chairman, John A. Musser and A. H. Hulshizer, of the Philadelphia County Medical Society; lastly, a committee from the Philadelphia Pediatric Society: Drs. S. M. Hamill, chairman, J. Madison Taylor and D. L. Edsall. Every man was at his post, and after a preliminary conference it was agreed to allow the advocates of the bill to present their case as they chose, taking an hour and a half to do so; then the medical committees were to reply as they chose, for the same length of time. Finally, the advocates were to have fifteen minutes to sum up the case.

The character of the presentation by one of the speakers was a pompous arraignment of medical men and their practices generally. They were stigmatized as swayed by the most sordid and mischievous motives, and the chief contention stated that not only did vaccination not protect, but it was essentially syphilis and "produced that loathsome disease." If loudness of voice and heat of body could sway multitudes, the committee should have been promptly convinced of the evils outlined, but inasmuch as they appeared to be a very intelligent and judicious body of men, it often transpired that they appeared much amused by his fervid eloquence and looseness of statement. The testimony of another was chiefly a rambling array of personal experiences, which would appear to be enormous, and much vague conjecture. The "experts" then began to demonstrate the horrors of vaccination, all which will no doubt appear upon the records and can be secured by those who desire to peruse it at length. This was illustrated by livid pictures of impetigo contagiosa and septic conditions following vaccination and what purported to be copies of plates representing syphilis, from Ricord, etc.; also a series of tables were given from old English records, but no mention was made of Continental statistics.

The medical committee began their reply by a most comprehensive yet succinct presentation by Dr. John K. Mitchell, followed by Dr. Wm. M. Welsh, who gave, in addition to statistics drawn from German, Austrian and other sources, his own enormous personal experience of between five and six thousand cases of smallpox, which were published in 1894, and drew careful deductions from his studies of the protecting power of vaccination. Dr. James C. Wilson made a brief but pungent reply to the points claimed by the introducers of the bill, in a most scholarly and eloquent fashion. Dr. Hamill and myself were called upon for remarks, but we felt that the matter had been amply elaborated.

The members of the committee assured us we need have no fear of further difficulties at this time, as the introducers of the bill made so feeble a showing that they offered no testimony of a convincing character whatsoever. Indeed, it seemed to be a needlessly powerful array of scientific opinion and medical experience against a pitiably feeble effort of a few misguided men who obviously had not studied the matter fully. However, two years before, at the same place, a similar bill was almost made law, at which time the medical societies had no knowledge of the measure to be introduced, and it was only due to the good sense of the committee that the measure was then defeated.

It is most important when such movements are initiated that the medical men meet them fairly and promptly, otherwise much trouble may result, and the community be deprived of one of the most important safeguards against disease, death, and commercial paralysis.

Finally, it is a curious commentary on medical apathy that the only city in the State to send any organized opposition to this insidious measure was Philadelphia. The towns and other large cities of the State failed to raise their hands and, except for the earnest efforts of these busy men the measure might have been passed, not on its merits but because there was no one to reply.

J. MADISON TAYLOR, M.D.

Congenital Deformities of Hand.

PHILADELPHIA, PA., March 21, 1899.

To the Editor:—Referring to Dr. F. R. Sherwood's very meritorious article in the JOURNAL of March 11, on the above subject, I am constrained to contribute this brief record of an observation, made *en passant* as it were, which may possess some interest for the doctor, and for some other readers.

It was several months ago that, while riding in a trolley-car, I saw sitting upon its mother's lap near by, a child apparently about three years of age, having five distinct fingers on each hand—no thumbs. In place of the latter there were two prehensile fingers having each three phalanges, and quite closely resembling the apposed forefingers respectively, in size, shape, length, and mobility. The *finger-thumbs* seemed to serve the hands with as much freedom of motion, prehension and adaptability as ordinary thumbs, as I could unmistakably detect while in a sufficiently favorable position to notice the child's movements without seeming to be too obtrusive.

Very respectfully,

HOWARD S. ANDERS, M.D.

Largin in Gonorrhea.—L. Fürst of Berlin warmly endorses largin and protargol in the treatment of gonorrhea muliebris, considering the former more strongly bactericidal while still possessing all the other advantages of protargol (protargol 8.3 per cent. silver, largin 11.01 silver). He keeps the patient very quiet in bed for three weeks, as he finds success impossible with ambulatory treatment, and starts above the seat of the infection to prevent ascending infection, commencing by irrigating the uterine cavity when the lesion is at the cervix.—*Derm. Ztft.*, February.

Current Medical Literature.

Medical Record (N. Y.), March 25.

1.—Neurasthenia, Etiology and Treatment of. Joseph Collins and Carlin Phillips.
2.—Eruptions of Face Due to Nasal Pressure. G. D. Murray.
3.—Cocain, Notes on. Walter P. Jenney.
4.—Bottini Operation, Inflating the Bladder with Air Preliminary to. Bransford Lewis.

Medical News (N. Y.), March 25.

5.—Abscess of Lung, with Clinical Data. Henry L. Elsner.
6.—Occipito-Posterior Positions in Labor Cases, the Diagnosis and Management of. Charles H. Glidden.
7.—Nasal Catarrh in Children. Clarence C. Rice.

New York Medical Journal, March 25.

8.—U. S. Army Ration and its Adaptability for Use in Tropic Climates. Louis L. Seaman.
9.—On a Polymorphous Cerebral Tumor Containing Tubercles and Tubercle Bacilli. Claribel Cone.
10.—Antiphthisic Serum, a Further Report on. A. Mansfield Holmes.
11.—Bathing a Regiment. H. M. Cohen.
12.—Chronic Ulcers of the Leg, Treatment of. John B. Corsiglia.
13.—Gonorrheal Vaginitis and its Treatment. Harry Greenberg.

Boston Medical and Surgical Journal, March 23.

14.—Phlegmasia Dolens, or Milk-Leg in Typhoid Fever. J. M. DaCosta.
15.—Infant Feeding. Charles W. Townsend.
16.—Probing of Nasal Duct from Nose. Arthur J. Shaw.

Philadelphia Medical Journal, March 25.

17.—Dysphagia and Cough, Treatment of, Especially in Tuberculosis. W. Frudenthal.
18.—Neurotrophic Function, bearing of, on Cutaneous Conditions. Samuel Wolfe.
19.—Hepatic Sclerosis, Some Signs of. A. L. Benedict.
20.—Poisoning by Roaches, Report of a Case. J. Murray Johnson.
21.—Triple Infection, two Cases of. Augustus A. Eshner.

Medical Review (St. Louis), March 25.

22.—Trifacial Neuralgia (Surgical) Treatment of, with Report of Case of Removal of Gasserian Ganglion. N. B. Carson.

Cincinnati Lancet Clinic, March 25.

23.—Puerperal Eclampsia. Robert W. Stewart.

Journal of Medicine and Science, March.

24.—Bovine Tuberculin Tests. George H. Bailey.

Journal of Nervous and Mental Diseases, March.

25.—Deep Reflexes of Lower Extremities, Points of Special Interest in the Study of. Charles K. Mills.
26.—Stereognostic Sense, Contribution to Knowledge of. Joseph Sailer.

American Gynecological and Obstetrical Journal, March.

27.—Myomectomy by a New Method. Alex. J. C. Skene.
28.—Malposition of Uterus, Electricity in Mechanic Treatment of. Franklin H. Martin.
29.—Malposition of Uterus, Use of Massage in. William H. Rumpf.
30.—Displacement of Uterus, Tampons and Pessaries in Treatment of. T. J. Watkins.
31—Recent Pelvic Surgery, Relations of Pelvic Cellulitis to. Ely Van de Warker.
32.—Lower Uterine Segment, Dangerous Thinning and Elongation of. Robert L. Dickinson.
33.—An Elective Cesarean Section. G. M. Boyd.
34.—Ethyl Bromid, Value of, in Gynecology and Obstetrics. Frank C. Hammond.

Medicine, March.

35.—Skin, Transplantation of, and Origin of Pigment. Leo Loeb.
36.—Foreign Bodies in Maxillæ, Implantation of. Carl Theodor Gramm.
37.—Rheumatism, Differentiation of Chronic Forms of. Louis Faugéres Bishop.
38.—Neurasthenia, Remarks on Treatment of. Hugh T. Patrick.
39.—Gelatin in Aneurysm, Subcutaneous Injections of. Harold N. Moyer.

Maryland Medical Journal, March 25.

40.—Croupous Pneumonia, Treatment with Hot Water Bags. Louis Kolipinski.
41.—Vaccin Virus, Purified. W. F. Elgin.

International Medical Magazine, March.

42.—Phthisis, Notes on Cases of, with Peculiar Cardiac Physical Signs. Wm. Ewart.
43.—Typhlitis, a Medical Study. A. L. Benedict.
44.—Chronic Plumbism from Drinking Water. L. Smirnow.

American Journal of the Medical Sciences, March.

45.—Sporadic Trichinosis, Clinical Features of. Wm. Osler.
46.—Syringomyelia with Unusual Symptoms, a Case of. Wm. Norton Bullard and John Jenks Thomas.
47.—Typhoid Fever Complicated by Cholecystitis, Tapping of Gall-Bladder; Cholecystotomy; Death. C. N. B. Camac.
48.—Dupuytren's Contraction of Palmar and Digital Fascia, a Clinical Study of. J. B. Nichols.
49.—Empyema of Frontal Sinuses and Intracranial Infection. C. L. Gibson.
50.—Röntgen Rays, Relation of Trachea and Bronchi to Thoracic Walls Determined by. Joseph A. Blake.
51.—Hemiatrophy of Brain without Disturbances of Intelligence or Personality. Pearce Bailey.

Medical Register (Richmond, Va.), March.

52.—Meningitis, Cerebrospinal Followed by Gangrene of Feet. W. P. Matthews.

Columbus Medical Journal, March.

53.—Extra Uterine Pregnancy, Clinical Phases of. O. M. Cardier.
54.—Epithelioma of Penis, a Case of. N. E. Aronstam.

Southern Medical Record (Atlanta, Ga.), March.

55.—Tubercular Peritonitis, Diagnosis and Treatment of. William L. Robinson.
56.—Phthisis Pulmonalis, Creosote in. L. H. Warner.

Pediatrics, March 17.

57.—Multiple Sarcomata in a Child. Frederick A. Packard.

58.—Congenital Talipes Equino Varus: Circumcision. William Rodman.
59.—Precordial Area in Children Ranging in Age from Seven to Puberty, and Its Relative Value in the Diagnosis of Heart Lesions in Cases Presenting Systolic Murmurs. Wm. J. Butler.
60.—Multiple Congenital Deformities, Two Cases of. R. Abrahams.

St. Louis Medical and Surgical Journal, March.

61.—Chronic Ulcer of Leg, Rapid and Successful Treatment of. A. H. Ohmann-Dumesnil.
62.—Tuberculosis, Cure of, Proven by Experiment on Guinea-pigs. A. D. Barr.

Bulletin of Johns Hopkins Hospital, Jan.-Feb.-March.

63.—Sphincter Ani Muscle, Dissection and Liberation of, Followed by Direct Suture in Complete Tear. H. A. Kelly.
64.—Müllerian Duct, Abberant Portions of, Found in Ovary. Wm. Wood Russell.
65.—Uterine Hemorrhage, Cause and Significance of, in Cases of Myoma Uteri. J. G. Clark.
66.—Suprarenal Gland, Primary Malignant Tumors of, Study of Sixty-seven Cases. Otto Ramsay.
67.—Corpus Uteri of Non-pregnant Women, Bacteriology of Cavity. Report of Sixty-eight Cases. G. Brown Miller.
68.—Vermiform Appendix, Presence of Foreign Bodies in. James F. Mitchell.
69.—Ovary, the Blood-Vessels of, Their Origin, Development and Degeneration. J. G. Clark.
70.—Ovarian Cysts in the Negress. Thomas R. Brown.
71.—Acute Ulcerative Endocarditis, Caused by Hitherto Undescribed Peptonizing Diplococcus. W. G. MacCallum and T. W. Hastings.

Fort Wayne Medical Journal, March.

72.—Carbolic Acid Poisoning, Treatment of. Wm. O. Gross.
73.—Physician as a Business Man. Joseph Fairhall.

Peoria Medical Journal, March.

74.—Cancer. E. M. Sutton.
75.—Colitis, Membranous. R. A. Kerr.

Alabama Medical and Surgical Age, March.

76.—Fracture of the Thigh, Hodgen Splint for. George S. Brown.
77.—Pleurisy. Wm. M. Jordan.
78.—Puerperal Infection and Its Consequences. Wyatt Heflin.

University Medical Magazine, March.

79.—Hydrogen Peroxid, Intratympanic Injections of. B. Alexander Randall.
80.—Optic Nerve, Foreign Body in. Charles A. Oliver.
81.—Hereditary Syphilis of Nasopharynx at Puberty, a Case of. P. S. Donnelian.
82.—Anesthesia, Schleich's Mixture for. Walter Lathrop.

Canada Lancet, March.

83.—Dislocation of Hip, Congenital. B. E. McKenzie.
84.—Gynecology, Progress of. A. Lanthorn Smith.

Annals of Gynecology and Pediatry, March.

85.—Ovarian Tumor Removed During the Acute Stage of Typhoid Fever. E. W. Cushing.
86.—The Uterus Again. E. F. Fish.
87.—The Placenta, Premature Separation of. Charles Greene Cumston.

Journal of Cutaneous and Genito-Urinary Diseases, March.

88.—Acute Gonorrhea, a Study in the Treatment of. George Knowles Swinburne.
89.—Lupus Erythematous in a Tuberculous Subject. J. A. Fordyce.
90.—Are Malignant Growths from Pigmented Moles Carcinomatous or Sarcomatous? E. Caspar Gilchrist.
91.—Nevus Pigmentosus, Congenital Multiple. Burnside Foster.
92.—Herpes After Large Doses of Arsenic. Charles O'Donovan.

American Journal of Obstetrics and Diseases of Women, March.

93.—Sexual Organs, Physical and Moral Effects of Absence of Internal Female. Paul F. Mundé.
94.—Puerperal Infection. Julius Rosenberg.
95.—Post-Operative Insanity. George H. Rohé.
96.—Post-Operative Insanity and Undetected Tendencies to Mental Disease. Henry M. Hurd.
97.—Catgut in Surgery, Advisability of Using, Method of Preparing. C. C. Frederick.
98.—Catgut, Method of Preparing. Barton C. Hirst.
99.—Hysterectomy Following Double Ovariotomy for Malignant Adenoma. J. M. Baldy.
100.—Labor, Abnormal Mechanism of, Two Cases of Obliquely Contracted Pelvis with. Edward P. Davis.
101.—Peritonitis, Simulated, in Hysteric Woman. George Wythe Cooke.
102.—Pregnancy, Multiple, Case of. Jennie G. Drennan.

1.—ETIOLOGY AND TREATMENT OF NEURASTHENIA.—Collins and Phillips present an analysis of 333 cases of nervous exhaustion, and find that it is more frequent in middle life and among married than single. Youth and old age are generally excepted; about 80 per cent. of the cases follow the indoor occupations; fully one-half gave their nationality as American, but this included a large number that should be classed as German, Irish and Russian-American. The most notable frequency was among the Jews. The author estimates that upward of 40 per cent. of the number were Polish, Russian and Austrian Jews. Heredity was an important etiologic factor, also overwork and sexual excess. The treatment is largely prophylactic with special training of the young, special methods of education and careful attention to general health, particularly when they come to the period of puberty. The authors lay special stress on the general hygiene, isolation, proper amount of sleep, dietary, interdiction of stimulants, attention to the excretions and elimination, and hydriatic treatment. Electricity, rest and exercise, climato-therapy are also special heads. As for drugs, they are of least importance, though not to be altogether neglected. Individual treatment is essential.

2.—ERUPTION OF FACE.—Murray calls attention to facial eruptions, which he believes are due to special pressure within the nose. The characteristics were particularly a muddy complexion and friable skin, which rapidly disappeared after operation. They always appear worst on the side corresponding to the pressure, and clear away first on the opposite side. He believes that they substantiate Lennox Browne's theory of sensitive areas in the nose, and makes a plea for a careful search for some irritation of that organ in the treatment of all skin diseases of the face of uncertain origin.

3.—NOTES ON COCAIN.—Jenney calls attention to the local effects of cocain in solution when applied to the skin, and to the possibility that the peculiar effects noted are due to the fact that the drug may not consist of a simple substance, but may be a mixture of two alkaloids, one non-poisonous and analgesic and antiphlogistic and the other actively toxic.

4.—INFLATING BLADDER FOR BOTTINI'S OPERATION. Lewis suggests that a boric acid solution used in Bottini's operation may produce a scalding effect in proximity to the heated blade and therefore suggests the advisability of air inflation instead. He believes that the experience of those who use this method will be more favorable than those operating with fluid in the bladder.

5.—ABSCESS OF THE LUNG.—Elsner reports three cases of abscess and discusses the causes and diagnosis, suggesting the persistent use of the exploratory needle in corroborating the diagnosis. The majority of the cases, if detected in time and radically treated, will recover.

7.—NASAL CATARRH IN CHILDREN.—Rice discusses cause and treatment in cases of nasal catarrh in children, and believes too much stress has been laid on the constitutional conditions and too little on the local nasal lesions, which are the essential exciting causes.

8.—ARMY RATION IN TROPIC CLIMATES.—Seaman continues his observations (begun in a previous number) on the adaptability of the U. S. army ration to these climates, recounting its effects on the troops the past summer. Considering its unsuitableness as a diet in the tropics, he points out its defects, compares it with the British ration, and makes suggestions as to a suitable ration.

10.—ANTIPHTHISIC SERUM. TR—Holmes, who first published the results of his observations in the JOURNAL (Feb. 5, 1898), here brings his observations down to Jan. 1, 1899, covering a period of sixteen months.

14.—MILK LEG IN TYPHOID FEVER.—Da Costa considers this condition as illustrated by soldier patients in the Pennsylvania Hospital, where the general proportion of cases with this complication is not more than 1 to 2 per cent. There were, however, 30 cases, or almost 14 per cent., among the 215 cases of typhoid treated in soldiers. Of 18 of these 30 cases, the left leg was affected in 3, the right in 2, and both in 13, the latter generally beginning on the left side, when not beginning simultaneously in both. As to the greater tendency of this complication to occur in the soldier patients, he thinks it may perhaps be attributed to relaxation with distension of the venous system in the legs, due to marching, thus predisposing them to the disease. The cases likewise occurred in those in whom the typhoid fever had been very severe, and generally at the end of the fever. Besides reporting cases, he considers the symptoms and treatment: elevation of the leg; fomentations with hot compresses wet in lead water and laudanum, or witch hazel distillate; laxatives, in constipation; in persistent pain, belladonna plaster strips along the veins; absolute rest in bed; continued mechanic support by bandages, etc., after the patient sits up, until the veins recover their tone and all symptoms of obstruction are past. He avoids massage when there are signs of venous disturbance.

15.—INFANT FEEDING.—Townsend points out the need of a knowledge of home modification of milk, and that while it is essential that the physician know in percentages the amount of fat, sugar and albuminoids he is giving, so much calculation is required by the usually advised methods that very few will carry it out. He gives the following rule for a simple method he has found effective: "Each ounce of 10 per cent. cream in a twenty-ounce mixture represents .50 per cent. of fat, .20 per cent. of albuminoids and .20 per cent. of sugar; and each even tablespoonful of sugar of milk represents 2 per cent." This gives a fixed relation between the fat and albuminoids, the fat being two and one-half times as much as the albuminoids, the normal relation in human milk. To increase the albuminoids without increasing the fat, add the milk from which the cream has been removed or whole milk or top milk containing less than 10 per cent. of fat. And where it is necessary to increase the albuminoids gradually, without increasing the fat beyond 4 or 5 per cent., it can be done by pouring off more of the top milk, so there is less fat in proportion, while the amount of albuminoids remains as at first—4 per

ent. He derives his rule from recognition of the fact that to make cow's milk, containing more albuminoids and less sugar than woman's, resemble the latter, it is necessary to dilute it with water and add sugar of milk. The top quarter taken from a bottle or can of milk that has stood from six to eight hours contains 10 per cent. of fat, and albuminoids 4 per cent., while a tablespoonful of sugar of milk weighs three and one-half drams, and, added to a twenty-ounce mixture, raises the percentage of sugar 2 per cent.

16.—PROBING OF NASAL DUCT.—Shaw presents his method of probing, of great value in epiphora, not relieved by passage of probe from above or in obstruction due to folds or hypertrophy of the entire nasal mucous membrane. The method is as follows: Hold the long arm vertically upward, and the short arm now lies parallel to the floor of the nose; now, after dilating the nose with the nasal speculum, and throwing a good light from the head mirror, pass the point in under the lower turbinate, then bring the long arm gradually down; the probe point slides well up under the lower turbinate and glides forward so that one can feel the probe as it slides into the canal opening; should it not go in directly, slide gently back and forth and it will surely enter. After it enters push it gently up the duct as far as it will go. The only harm an improperly handled probe can do here is to injure the canal exit; there are no other structures here; the wall between the antrum and canal would usually require considerable force to penetrate, and if penetrated would do no serious harm. The orbit is separated by considerable antrum space—one-half inch or more from the entrance of the canal; then, briefly, there are absolutely no structures one can harm.

18.—SKIN IN ESTIMATING SYSTEMIC STATES.—Wolfe calls attention to the significance of the condition of the skin in estimating general systemic states, or judging of organic changes or functional disturbances of the deeper organs. He makes a systematic classification and infers that there are impulses passing from the centers through the conducting paths to the periphery, and which largely affect metabolism; and also special portions of the cerebrospinal axis, which have specially to do with the generation of these impulses, thus constituting centers; and that the trophic centers are closely related to the vasomotor centers, but are not identic with them. Trophic centers are situated in the spinal cord, and probably can be found at every level. That the ganglia of the posterior spinal roots have trophic functions relative to the sensory nerve fibers is unquestioned, and there is reason for believing the ganglia of the sympathetic also to be connected with the trophic function. After further discussion he states that it is quite probable that the cerebrospinal system conveys impulses which are conducive to growth, while the sympathetic exercises restraining influences, and that this function is at least partially independent of the vasomotor system. His final conclusions are: 1. That trophic powers and metabolic properties are inherent in the tissues themselves. 2. These are related in highly specialized organisms to impulses generalized in gray nervous matter in the ganglionic systems of the cerebrospinal axis and the sympathetic. 3. That impulses arising in the brain and cord are anabolic in character, while those arising in the sympathetic are katabolic. 4. That the impulses are in each case conveyed over special fibers adapted to their function by virtue of their central and peripheral terminations. 5. That the field of dermatology offers exceptional opportunities for the study of neurotrophic processes.

19.—SIGNS OF HEPATIC SCLEROSIS.—Benedict calls attention to the fact that after determining the size of the liver, we are deficient in exact means of diagnosing its condition. Sallowness is an almost uniform sign, while jaundice is seldom present except in the biliary form of Hanot, or when there is a concomitant catarrhal condition of the biliary radicals. The common association of a similar condition of sallowness in conditions of autointoxication renders this sign of little importance. Caput medusæ, while a typic sign, is extremely rare, especially in the better class of patients examined; again, venous congestion in this region may be due to obstruction associated with umbilic hernia, or abdominal veins may be rendered visible and enlarged from the constant use of a belt. Hemorrhoids are so commonly found in healthy individuals that the value of this sign is lessened, while ascites does not usually appear until after the diagnosis of hepatic sclerosis is an easy matter. The value of the test for hippuric acid in urine after administering benzoic acid is lost in view of the absence of a reliable test for distinguishing hippuric and benzoic acid in solution. Some writers now consider that benzoic acid is converted into hippuric acid in the kidneys, so that test could not apply to hepatic disease. The production of alimentary glycosuria has been used to test the adequacy of the hepatic function; often, however, the absence of this sign of hepatic inadequacy is due to a slowness of absorption, or possibly to renal impermeability. He recommends testing the rapidity of intestinal absorption in all cases. A new sign is suggested, available for a comparative early diagnosis of hepatic sclerosis. "In a compound curve corresponding closely to the attachment of the diaphragm, a number of arborescent venous tracings are seen. Each has a spread of branches, and a height of about three-fourths inch. Each trunk ends abruptly by dipping into the deeper tissue. These marks are usually limited to the right anterior region, but may extend to the left of the sternum or into the axillary region." The sign is often absent, but seems to be present in cases without other circulatory signs. Splenic enlargements he considered as almost a constant sign of back pressure from the liver; occasionally it undergoes fibroid contraction.

20.—POISONING BY ROACHES.—Johnson reports this novel case in a nursling of six months, while under treatment for some bronchial affection. The administration of small doses of the mild chlorid of mercury effected the passage of an offensive stool, and six roaches! Just how the roaches found their way to the child's stomach is not clear; the physician advances the theory that the roaches were attracted to the child's mouth by the cough mixture she was taking.

24.—BOVINE TUBERCULIN TESTS.—Bailey makes an excellent statement of the facts in regard to bovine tuberculosis, its danger and prevention. Discussion following the reading of the papers before the Portland Academy of Medicine is also published.

25.—DEEP REFLEXES OF LOWER EXTREMITIES.—Mills details and discusses a case of lost knee-jerk with retention of ankle-clonus, the symptoms of which were due to a combination of muscular and neural disease of somewhat uncertain pathology, though he suggests a possible toxic cause. He discusses at length the literature of the syndrome, which is limited, and offers the following conclusions as to its etiology:

"1. The syndrome may be due to a compression of destroying lesion, such as caries with pachymeningitis, or transverse myelitis, involving the spinal cord in the region of the patellar reflex arc, namely, somewhere between the second and fifth lumbar segments, and most probably the second or third lumbar segment.

"2. The syndrome may be due to disseminated sclerosis, foci of sclerosis being present both in the reflex arc for the patella, and in the lateral columns.

"3. The syndrome may be due to focal lesions, like hemorrhage, softening, or cavity formation, attacking points in the reflex arc, and also the lateral columns.

"4. The syndrome may be due to peculiar forms of developmental arrest of the spinal cord, as for instance to defect in the gray matter of the lumbar segments and in the lateral columns.

"5. The syndrome may be due to a combination of muscular and neural disease, as in my case, and as was probably also the case in the man suffering from typhoid fever as recorded by Fleury. It is known that hyaline degeneration of muscular fibers occurs especially in typhoid fever. Fleury's case was probably in its pathology not unlike my own.

"6. On theoretic grounds it seems probable that the syndrome might be due to a focal lesion in the cerebral cortex, or in the cortical spinal (pyramidal) tract, or to arrested development of the tract, associated with disease (inflammation or degeneration) limited to the crural nerves and their muscles!"

The article also discuses the question of the significance of the ankle-clonus in diagnosing organic from functional disorders, especially hysteria. Dr. Mills, like Gowers, holds to the opinion that the presence of true foot-clonus is, aside from conditions with contracture, a symptom of organic disease. It is from hysteria in particular that this diagnostic importance is greatest, and the medicolegal bearing of the questions are obvious. Dr. Mills admits that toxemic conditions may be accompanied with this symptom and that leaves open the way to a large number of apparent exceptions to this rule. There is no such certainty that the symptoms of what we may diagnose as neurasthenia or hysteria may not in some cases include in their etiology a toxemic element. The other reflexes discussed are the patellar clonus which he puts in the same general category, as regards its diagnostic significance, as the ankle-clonus, and the tendo Achillis jerk in tabes. Mills gives some weight to this last symptom as aiding in the diagnosis in doubtful cases, though he apparently does not quite agree with Babinski that it is as important as Westphal's sign. In conclusion he calls attention to the tendon and muscular reflexes in the diagnosis of encephalic tumors from tabes. When the muscle as well as the tendon phenomena are absent, the diagnosis of tumors is more probable. In all the cases (twenty-eight) of tabes examined, the quadriceps and gastrocnemius muscle phenomena

were present. Their absence in tumor he credits to a toxemia excited by the growth.

26.—THE STEREOGNOSTIC SENSE.—Sailer reports a couple of cases of loss of this sense (that of recognizing solid dimensions) and discusses the literature of this defect, concluding as follows: 1. The stereognostic sense is due to a complex sensory perception, the impulses of which are probably received in the parietal lobe of the brain, and there recognized in consciousness by some higher center or group of centers. It may be lost if either one of these centers is disturbed. 2. In case of peripheral disturbance, that is, some disturbance in or between the center and the parietal lobe and the terminations of the sensory nerves in the skin, stereognosis is lost, if tactile sense is lost, and it is greatly impaired or lost if localization sense is lost. It is usually, but not always, disturbed if the muscular sense is lost, but may persist if any of the other forms of cutaneous sensations are lost or disturbed. The apperceptive center may be disturbed as a result of severe injury to the brain, as, for example, in apoplexy, and in these cases the stereognostic sense may be lost, even though all forms of sensory phenomena are preserved.

28.—Vide JOURNAL, March 4, p. 484.

35.—ORIGIN OF PIGMENT IN SKIN TRANSPLANTATION.—Loeb found, in his experiments on guinea-pigs, that while white skin would not grow on defects where black skin has been removed, the reverse condition, black skin on white skin defects, showed natural growth and the pigment infiltrated. That is to say, in the guinea-pig, black skin can be successfully transplanted, while white skin can not. In discussing the causes of these facts, he refers to the leading views that have been expressed and largely favors the one that the pigment has its origin in metabolic changes in the epithelial cells, and that there is an essential difference between white and pigmented epithelium (vide JOURNAL, March 25, p. 670).

36.—IMPLANTATION OF FOREIGN BODIES IN MAXILLÆ.—Gramm relates experiments in this with reproduction of bone independent of periosteum. Of six experiments on dogs, he obtained good results in two, and found that while periosteum was most effective in bone production, all other connective tissue, when irritated and forming plastic exudates, are capable of producing bone. The process resembles an osteosclerosis consequent upon and following osteitis.

38.—NEURASTHENIA.—Patrick discusses the treatment and calls attention to two classes of cases, the one in which the condition is due to adequate causes, and the other in which predisposition favors its development under any slight excitation. The management of the two classes is necessarily quite different. In the first we have a disordered condition of nutrition and function due to an adequate cause, in which with proper treatment, we may expect a favorable result. In the other the disease may be said to have existed prior to its apparent development, and the individual must be treated. A large portion of the paper is given to accounts of cases.

39.—GELATIN IN ANEURYSM.—Moyer gives a critic review of subcutaneous injections of gelatin in aneurysm, on the theory that gelatin solutions increase the coagulability of the blood. His general conclusions are that the method has some value; that it must be used empirically, as experiments have not furnished sufficient basis for treatment; that a 1 per cent. solution should be used and great care taken in the technic. Absolute rest in bed is also necessary, and other treatment suitable in these cases. While not a cure for aneurysm, it may have value as a treatment. There may be dangers which have not yet been discovered in the treatment.

40.—HOT-WATER BAGS IN CROUPOUS PNEUMONIA.—Kolipinski advocates the use of large rubber bags, a gallon size being preferable, which are filled with boiling water. They are then each covered with a shawl or blanket so that the heat will be retained, and modified so that the skin will not be blistered. The bags are then placed side by side on the bed, the mouths pointing upward, and over these is placed a third shawl or blanket. The pillows being adjusted, the patient is placed so that the scapula on each side rests on a bottle. A mean temperature of 110 F. should be aimed at, as more than that is liable to blister, an accident which does no harm only so far as the discomfort is concerned. The bags are filled every three or four hours, and are kept on till the fever is all gone. In croupous pneumonia the diet should be light, the best being milk and cocoa. No remedial treatment is necessary. A history of ten cases is given which were successfully treated by the author with this method.

41.—PURIFIED VACCIN VIRUS.—This is a plea for the use of the glycerinated virus in place of the unscientific and unhealthy ivory "points."

42.—APPARENT DISPLACEMENT OF HEART.—Ewart refers to two cases reported by Hale White and Willmore (*Lancet*, Nov. 19 and Dec. 10, 1898), and reports two similar cases in his own experience, though in one the heart was retained in its abnormal position by adhesions. Assuming that all these cases were displacement of a mobile heart by atmospheric pressure owing to extensive distension of the right lung, without compensatory falling in of the chest wall, he suggests that skiagraphy during life might be of some diagnostic use, especially in such cases as those where the autopsy throws doubt on the diagnosis *intra vitam*.

43.—CECAL INFLAMMATION.—Benedict takes up the question of the surgical and medical treatment of cecal inflammation and calls attention to the older term typhlitis, which he rehabilitates as covering certain cases where the appendix may be nearly or quite uninvolved. The diagnostic points indicating these, as he enumerates them, are a history of coprostasis or an obvious increase of irritation of this part of the bowel, cecal tumors, normal condition of the leucocytosis at the beginning, absence of muscular rigidity, especially a board-like rigidity of the muscles of the right side of the abdomen, while a low temperature and rapid, thready pulse, and great prostration even with normal leucocytosis, are all unfavorable signs. None of these, good or bad, however, are pathognomonic; the diagnosis must be made with caution and from the clinical picture as a whole. As the writer states: "For the present, we must be exceedingly conservative in regard to denying our patients radical treatment," but there is hope that with greater experience we may learn to know just when to call in the surgeon and also to dictate the terms on which he shall act.

45.—SPORADIC TRICHINOSIS.—Osler points out that clinically and in hospital and private practice, trichinosis is a comparatively rare disease, but that in post-mortem and anatomic work calcified trichinæ are found in a by no means inconsiderable number of cases. He then cites cases he has himself thus found, and gives the history of the first case recorded in which it was recognized that trichinæ produce a severe and fatal disease in man, and reports in detail five cases, all of moderate severity, but cases in which the diagnosis was suggested by the blood examination and confirmed by muscle examinations. He gives as the three features of marked diagnostic value, muscular pains and swellings, edema and leucocytosis and eosinophilia, the former two being "well known," the latter brought out by a study of the blood in these cases. The eosinophilia was marked in each case (Case 1, 37 per cent.; Case 2, 67 per cent.; Case 3, 48 per cent.) and accompanied by a marked leucocytosis.

46.—SYRINGOMYELIA.—Bullard and Thomas present a case of interest in presenting none of the typic symptoms of this disease, but symptoms at the time considered due to chronic hydrocephalus. Later came the paraplegia of sudden onset, with paralysis of the sphincters and anesthesia of the trunk and limbs below a given level. He says it may be necessary in future to distinguish a hydrocephalic type of syringomyelia in which the hydrocephalic symptoms are the only prominent ones in the early and middle stages.

47.—CHOLECYSTITIS COMPLICATING TYPHOID FEVER.—Camac details a case with the history of this complication, method of infection, symptoms and treatment. Infection is by four channels: Through the intestinal wall; directly from the duodenum through bile passages; through the liver; through the portal system. A study of collected cases shows the tenth to the thirtieth day as beginning of the disease, the twenty-first to the thirtieth having the majority. Out of the 25 cases of which notes were made, pain at the onset occurred in 19. The symptoms, however, present no regularity. As 28 cases showed perforation of the gall-bladder in 21, he considers active treatment advisable, e. g., counter-irritation, cholecystotomy, or aspiration. The first is of use only when pain is complained of, to avert further development, the real question depending on the two latter. His conclusions are: "The complication occurring at the height of the disease, when the patient is in the worst possible condition for operation, is a serious consideration. If, however, there is any chance of averting what from the table appears to be inevitable, is it not through prompt operation? And are we not increasing the dangers by attempting to aspirate the gall bladder?"

48.—DUPUYTREN'S CONTRACTION.—Nichols presents the results of a study based on fifty cases of contracted fascia among inmates of the U. S. Soldiers' Home, Washington, D. C., and embracing all grades of severity. He divides the cases into three groups: 1. Ordinary well-marked typic cases in which there is contraction of one or more fingers, together with the characteristic manifestations of the disease in the palm. 2. Cases in which there is hypertrophy of the palmar fascia and the characteristic thickening, induration and altered configuration of the skin are present in the palm, but the fingers are not contracted. 3. Cases in which the shortening of the fascia are limited entirely to a finger, the palm being unaffected. Of the

50 cases, 31 were of the first, 18 of the second and 1 of the third class. He also gives results of a systematic examination of the hands of 1000 ex-soldiers, for determining the frequency with which Dupuytren's contraction occurs. He believes that the contraction is is of idiopathic origin, more apt to occur in the senile period, and showing marked hereditary influence.

49.—EMPYEMA OF FRONTAL SINUSES.—Gibson reports a case of this comparatively rare form of suppuration in the cavity of the frontal sinuses, with intercranial infection, and cites cases from the literature.

50.—RELATION OF TRACHEA AND BRONCHI TO THORACIC WALLS.—Blake considers the difficulties of determination of these relations as largely overcome by the X-rays, the bronchial tree being first made impervious to the rays by the injection of a proper substance. His method is to harden the bodies with formalin and then fill the bronchi with a metallic alloy fusing at 155 C., forced in at moderate pressure.

51.—HEMIATROPHY OF BRAIN WITHOUT DISTURBANCES.—Bailey reports a case which he considers unique, in that there was no disturbance of intelligence or personality, there being destruction of the frontal region of one side.

52.—CEREBROSPINAL MENINGITIS FOLLOWED BY GANGRENE OF FEET.—This is a report of a case of this disease in a colored woman aged 25. The illness commenced April 22, 1898, with a severe chill, which was followed with severe back- and headache. After this there was continuous vomiting, with a backand headache and stiffening of neck and back muscles; pulse slow, full and bounding. Crushed ice and lime-water finally ameliorated the vomiting. The patient weakened slowly for two days, the head being drawn backward, muscles more rigid, pulse still slow. By the evening of the fifth day, the condition became alarming; herpes febrilis on lips and throat; bowels quite loose, showing paresis of muscular layers of the intestines; opisthotonos present. Strychnia and whisky were given hypodermically and hot applications applied to the surface and extremities. Other medicines were also given as required, and the patient began to improve until May, when it was noticed that gangrene of the toes had taken place. This, the writer thinks, was caused by ergot, which she had been given at the beginning of the illness in dram doses every four hours. The feet were kept wrapped with cloths saturated with bichlorid solution until a line of demarcation was established, and then a portion of the phalanges and a part of the second metatarsal of the left foot were amputated. The patient recovered.

57.—MULTIPLE SARCOMATA IN CHILD.—Packard reports a case, in detail and with illustrations, which "suggests the possible close connection between sarcoma, Hodgkin's disease and leukemia—a connection that is in some ways apparent; in other ways quite vague."

58.—CIRCUMCISION.—Rodman describes his technic in this operation, as follows: In drawing the prepuce forward over the glans, be sure and not cut while you are still making traction on the prepuce, as you may, in that way, take off too much. Pull it down to the proper point, then hold it with the forceps, being sure that the forceps are held obliquely so as not to include any portion of the glans, and snip off the prepuce in front of the forceps. No matter how you cut, you will find that the mucous membrane will not be severed on a line with the skin; it is so resilient that it gets out of the way of the knife or scissors. You will have no vessels to tie, as the stitches already mentioned will include the small artery at the dorsal aspect of the penis. Then apply the dressing shown you to day. Do not use sutures, except in the adult, and then it is better to use fine catgut. The result will depend largely upon the care with which you dress the case. The operation is really of less importance than the dressing.

59.—Vide JOURNAL, January 21, p. 124.

63.—SUTURE IN TEARS OF PERINEUM.—Kelly divides the cases of complete tear into: 1, those in which the tear barely extends through the sphincter and goes no farther; 2, those in which the sphincter ends are separated by a well-defined interval of a centimeter or more. In the first class, he considers the resulting cicatrization a conservative effort of nature to approximation of the ends. Experience in the second class of cases—sphincter ends not bound together—leads to the conclusion that "tonic control exercised over the bowel functions resides rather in the internal sphincter ani than in the external, and that the external sphincter muscle is a provision against an emergency and is intended to form a temporary, powerful supplement to the internal sphincter. . . . When the external sphincter ends lie close together and the internal sphincter is therefore uninjured, continence is always preserved." He details operative procedures which he favors, with his modifications: "carefully conducted denudation, giving the sphincter a wider berth, so as to separate it from the skin surface, after all the parts have been brought into apposition, by a greater interval"; "dissection and liberation of the sphincter ends until one or one and a half centimeters or even more are pulled out free on each side." He favors, equally, attention to the securing of accurate approximation of the internal sphincter, and gives his method.

65.—UTERINE HEMORRHAGE IN MYOMA UTERI.—Clark's study is based on the artificial injection of ten specimens of myoma uteri, with a review of 100 other cases. He treats of the normal circulation of the uterus, the mechanic disturbances in the circulation by the myomata (illustrated by casts), the surgical aspect, and the literature on the etiology of hemorrhage in cases of this class.

66.—MALIGNANT TUMORS OF SUPRARENALS.—Ramsay presents a study of sixty-seven cases, with conclusions as to symptomatology, prognosis and operative possibilities. His summary notes the rarity of malignant tumors of the suprarenal gland, more common in the male sex. In many no symptoms point to the suprarenal origin, while the most prominent symptoms are rapid loss of strength, debility, emaciation, digestive disturbances and abdominal pain. Skin changes are rather the exception. The duration is shorter than is usual with neoplasms in other organs, and the diagnosis, impossible in many, is difficult in all cases. Differential diagnosis must be made from other suprarenal diseases, renal tumors, hepatic tumors, diseased retroperitoneal glands, and from cysts and new growths of the pancreas. Even following a successful operation, the prognosis is always grave, and while the operation gives the only hope of relief, it has been successful in but two cases, the principal difficulties in it being the friability of the tumor, tendency to hemorrhage, and frequency of adhesions.

67.—BACTERIOLOGY OF CAVITY OF CORPUS UTERI.—Miller tabulates his findings in 68 cases, in non-pregnant women, 53 showing changes of an inflammatory nature as indicated either by endometritis, or by inflammatory changes in the uterine adnexa. In histologic examinations of the uterine mucosa in 51 cases, 19 showed an acute or subacute, and 12 a chronic endometritis. The endometrium showed no inflammatory change in 18, and in none of the cases where there was no endometritis were bacteria found, strengthening the prevailing view that "the body cavity of the normal uterus is free from bacteria." The gonococcus was found 7 times, the streptococcus pyogenes once, the staphylococcus pyogenes aureus once, and staphylococcus pyogenes albus twice. Tubercle bacilli were found twice, and unidentified saprophytic bacteria 4 times. Clinically, of the 53 cases showing inflammatory changes, 26 were probably of gonorrheal origin, 12 puerperal, 3 tuberculous, 4 due to myomata or carcinoma, 4 to previous operations, and 2 were unclassified. The gonococcus was, therefore, the probable cause of infection in more than one-half.

68.—FOREIGN BODIES IN VERMIFORM APPENDIX.—Mitchell has collected 1400 cases during the last ten years, and finds that about 7 per cent. contain true foreign bodies, while in 700 of these cases, in which a definite statement was made as to the nature of the foreign body, 45 per cent. were fecal concretions. He considers the subject with especial reference to pointed bodies, and finds that pins are the most conspicuous found and by no means uncommon, the appendix seeming to act as a trap for pointed bodies and objects like shot or bullets. Foreign bodies are, however, known to play a much smaller rôle than that formerly accredited to them in appendicitis. Cherry-stones, grape-seeds, etc., are rarely found.

71.—ULCERATIVE ENDOCARDITIS DUE TO A HITERTO UNDESCRIBED DIPLOCOCCUS.—MacCallum and Hastings report a fatal case of ulcerative endocarditis in a man 37 years old, in which there was isolated from the blood during life, and besides, after death from the vegetations upon the leaflets of the aortic valve and from infarcts in the spleen and kidney, a diplococcus which in its mode of growth resembled the micrococcus lanceolatus, the diplococcus intracellularis meningitidis and the streptococcus rather than the pyogenic staphylococci, although in its behavior on gelatin it resembled the staphylococci. From all of the pyogenic cocci mentioned it differed in bringing about the peptonization of milk and coagulated blood serum. In view of the last named peculiarity the name "micrococcus zymogenes" is proposed for the organism.

72.—CARBOLIC ACID POISONING.—The rational treatment heretofore has been to check the escharotic action of the acid on the living tissues, which was accomplished by giving large quantities of fixed oils, etc. Subsequent developments proved the efficacy of exhibiting a strong solution of some soluble sulphol, endeavoring to form a new chemic compound of the sulphocarbolate variety. This acted well if given early and in sufficient quantity, but it failed if the acid had been absorbed. Gross refers to the experiments of Powell and Phelps, which resulted in the adoption of alcohol as an antidote for carbolic

acid poisoning. He then gives experiments which he himself made. In one of these experiments he deliberately placed the end of his tongue in carbolic acid which was contained in a shallow dish, with the result of receiving the full escharotic action of the acid on the soft, delicate tissues and membranes. The pain experienced was intense, yet the application of alcohol, which was made by holding a tablespoonful of the fluid in the mouth for a period of thirty seconds, entirely relieved the pain and destroyed the action of the carbolic acid so that no inconvenience was afterward manifested. He therefore became thoroughly satisfied that alcohol relieves the pain, and prevents the further destruction of tissue, besides acting as a stimulant when swallowed. The close relation of carbolic acid (phenol) and alcohol, the writer thinks, offers a solution to the situation. "The chemic symbol for carbolic acid being C_6H_5OH and that of alcohol C_2H_5OH, it appears that when brought in contact with each other the alcohol exerts a stronger influence over the phenol radicle and converts it into a new variety of the benzin or aromatic alcohol series, and in doing so it not only changes the molecular formulæ of phenol, but also converts it into a compound having the chemic and therapeutic properties of alcohol. The ease with which the antidote alcohol for carbolic acid is procurable and the simplicity of its application, coupled with its safe and rapid action, stamps it as being, as far as known at the present time, the specific for poisoning by carbolic acid."

76.—HODGEN'S SPLINT FOR FRACTURE OF THE THIGH.—Brown makes a strong plea for the use of this splint in the treatment of fracture of the thigh, and in other diseases and injuries of the leg. He has modified the splint in many respects, which, he believes, has added much to its value. The advantages of the Hodgen splint are that practically no shortening results, the writer having had but two cases of shortening in fourteen cases of fracture so treated. Union is facilitated by the exercise which both the patient and the limb get, and finally the comfort to the patient. An illustrated description of the splint is given, as well as its method of use.

78.—PUERPERAL INFECTION AND ITS CONSEQUENCES.—Notwithstanding the introduction of antiseptics into obstetric work, Heflin thinks the mortality from puerperal infection is yet too high. Antisepsis will not take the place of asepsis in obstetric work. The obstetrician should be as clean when he goes to attend a woman in confinement as the gynecologist or surgeon when he does a celiotomy. The finger nails should always be kept short. The hands and arms should always be thoroughly cleansed and rendered aseptic with bichlorid solution. If the hands come in contact with anything after they have been rendered aseptic, they should again be cleansed. The external genitals should be thoroughly scrubbed with soap and hot water, and if the labor is long an antiseptic douche should be used. The writer's treatment for the disease is to use antiseptic douches of 1 to 3000 bichlorid solution three or four times daily. The general treatment recommended is to keep the bowels moving freely, quinin in five-grain doses four times daily with alcoholic stimulants, preferably whisky or brandy, and nourishing diet. He thinks that the serum treatment of puerperal fever offers a great deal of promise, but as yet it is not satisfactory.

85.—OVARIAN TUMORS REMOVED DURING TYPHOID.—Cushing reports a case of ovariotomy for cystic disease in a 11-year-old girl, both ovaries removed during the attack of typhoid fever and with a temperature of 104 F. Impeded respiration (mechanic) necessitated the operation; recovery. Although the ovaries were removed before puberty, sexual development, in appearance and feeling, etc., seems perfectly normal after nearly seven years.

86.—ADVISABILITY OF REMOVAL OF UTERUS.—Fish discusses the question as to the advisability of removing the uterus in excision of the appendages, and concludes that he would leave it: 1. Because it is an important sexual organ in its natural site, and consequently not in the way of any other pelvic organ. 2. Because it preserves the vaginal vault, and when *in suspensio* maintains the contour and natural length of the vagina. 3. Because it precludes the possibility of vaginal hernia, prevents prolapsus vagina, and delays atrophy of the vagina. 4. Because it minimizes nervous shock and depressing mental manifestations. 5. Because it maintains the pelvic diaphragm and the anatomic geography of the pelvic contents. 6. Because in the event of successful ovarian transplantation, it might be reinstated as an organ of procreation. As regards the reason last given, he evidently thinks that the operation of ovarian transplantation has a possible future.

88.—TREATMENT OF ACUTE GONORRHEA.—Swinburne flushes out the anterior urethra with a hot solution of potassium permanganate, 1 to 4000, at a temperature of 110 to 115 degrees, in some cases 120, and flushing inch by inch, by grasping the penis between the thumb and finger at each point until the farthest point that can be grasped is reached; then only is the fluid allowed to pass back to the cut off muscle. Where only the anterior urethra is involved, it alone is irrigated, the patient lying on a table and the urethra being gently distended with a 2 per cent. solution of protargol, by the ordinary urethral syringe, one holding two or three drams being preferable. The patient grasps the glans as close to the meatus as possible, holding it about ten minutes. It is then closed with absorbent cotton and gauze bandage, to be thrown away at the next urination. As the first treatment may be accompanied with faintness, the patient must lie down to receive the injection. In involvement of the posterior urethra, he irrigates in the same way in those who readily learn to relax the sphincter, allowing the bladder to fill the meatus, emptying the bladder immediately. Where they do not readily learn this, he follows the anterior injection of protargol by a soft rubber catheter, sterilized, 12 to 26 F., having the eye near the tip. This is passed down to a point just entering the posterior urethra, and half an ounce of a 2 per cent. solution of protargol slowly injected through it. This the patient immediately urinates out.

93.—ABSENCE OF INTERNAL SEXUAL ORGANS.—Mundè reports two cases of congenital absence or rudimentary conditions of internal organs, with apparent normal sexual development. He discusses the physical and moral effects, and gives a classified list of twenty-seven cases observed within six years. He believes that castration of the adult female has no effect, physical, moral or mental.

95.—POST-OPERATIVE INSANITY.—The late Dr. Rohé says post-operative insanity is an etiologic, not a clinical type, generally of the confusional form, and not restricted especially to either sex or to any special class of operations. Attention should be given to possible septic infection in these cases. This is, as the *Journal* states, the last paper written by Dr. Rohé, and has a special interest on this account.

97-98.—PREPARATION OF CATGUT.—Hirst's method is as follows: 1. It is soaked in benzin for twelve hours, to eliminate the fat, then dried on blotting paper and soaked again in sterilized water to render it absorptive, after which it is immersed in a 5 per cent. solution of formalin for about fourteen hours. It is then washed in sterilized water to remove the excess of formalin, and stretched on a form, such as Edebohls uses for chromicized gut, and allowed to dry in a well-heated room for four or five days. Then it is wound on a wooden spool, so that the layers do not cross, and is finally put in a 10 per cent. solution of glycerin in absolute alcohol and sterilized for from forty-five to sixty minutes in a metal cylinder placed in an autoclave sterilized at 240 degrees F. In this way it is rendered absolutely sterile and antiseptic, as well as aseptic. He finds gut thus prepared absolutely satisfactory. It will last seventeen days in the vagina, and longer, imbedded in healthy tissue. It is as strong as catgut can be expected to be and is soft and pliable as silk; much more so than cumol gut. Frederick describes a somewhat different method. He winds the gut tightly on small glass spools in one layer, firmly secured, and immerses it in a 3 per cent. formalin solution for periods of one, three five and seven hours respectively, according to the size, the larger one (Nos. 2 and 3) the longest. Then he washes it in running water for an equal period or longer and sterilizes by boiling for fifteen minutes. Then it is placed in sterilized glass jars and covered with 95 per cent. alcohol with 8 or 10 per cent. of sterilized glycerin (that has been immersed in a bottle in boiling water for half an hour). Catgut thus prepared will be found, he says, always sterile, strong and durable, and will last a week or ten days before absorption. Chromicized gut is made by a twenty-four-hour immersion in a solution of bicarbonate of potassium (23 grains), glycerin and carbolic acid (each 2½ drams) and water 1 quart. Then, after draining and drying for a few hours, the gut is put through a formalin process as described above. Thus prepared, he says, it will resist absorption six weeks in all tissues except the peritoneum and the kidney.

101.—SIMULATED PERITONITIS IN HYSTERIC WOMAN.—Cooke reports a case in which gastric ulcer was diagnosticated from the symptoms which finally took on the characteristics of perforation peritonitis, excepting that the pulse was fuller and slower than would be expected in that condition. On this ground alone, operation was delayed, and as the patient did not get worse, a suggestion was made of hysteria. At this stage hysteric constriction of the lower limbs occurred, and an enema of asafetida emulsion dissipated the symptoms.

Let us have a Department of Public Health!

Association News.

Railroad Rates for the Columbus Meeting.—The Committee on Transportation hereby announces that the Central Passenger Association has informed the committee that a one-fare rate for the round trip has been agreed on to the Columbus meeting. Tickets to be sold on June 5 and 6 and bear return limit leaving Columbus June 10. The Central Traffic Association includes the territory east of Chicago and west of Pittsburg and Parkersburg. No trouble is anticipated by the committee in securing the above rates in the Western, Southwestern and Southeastern territories, but considerable doubt is entertained concerning the action of the Trunk Lines Association. The committee is now dealing directly with the doubtful territory and will exert every influence to secure the rate desired. A subsequent report will be made through the columns of the JOURNAL.

H. L. E. JOHNSON, M.D., chairman,
Washington, D.C.

Society News.

El Paso County Medical Society.—This society was organized last October and was the first organized in El Paso, Texas, that has held its own. It has a membership of twenty. The officers are: President, F. W. Gallagher; vice-president, M. O. Wright; treasurer, Howard Thompson; secretary, Junius A. Rawlings.

Jackson County Medical Society.—Dr. Kyger read a paper on "Dietetics, as taught in the Medical Colleges," before this society, at a recent meeting in Kansas City, Mo. He recommended having a chair on dietetics in every medical college, and said that physicians at the time of their graduation have no knowledge of the proper kinds of food necessary for patients.

De Soto County Medical Association.—This association met in Hernando, Miss., March 13. The secretary-treasurer presented his eighteenth annual report, and Dr. Watson presented, for diagnosis and advice as to treatment, a case of chronic tuberculosis of the knee-joint. Dr. Richmond McKinney of Memphis read a paper on "Chronic Hypertrophy of the Laryngeal Tonsil in Children." The following officers were elected for the ensuing year: President, A. L. Emerson of Eupora; first vice president, W. T. Wilkens of Lewisburg; second vice president, A. J. Weisinger of Days; secretary-treasurer (17th term), A. J. Jagoe of Hernando. The next meeting will be held May 8 and 9.

Kansas City Academy of Medicine.—At a recent session of this society, Dr. L. G. Burnett read a paper on Friedreich's disease, with report of a case and illustrative cuts showing the location of the pathologic lesion as compared to that of tabes. Dr. S. C. James, of the Missouri State Board of Health, related some of the difficulties the physicians of the State had in trying to get a bill through the legislature regulating the practice of medicine. He said that the desk of every member of the Legislature was daily filled with letters from quacks asserting that they were members of the leading medical societies of their community and voiced the sentiments of all the leading physicians in denouncing the proposed medical law now before the Missouri Legislature. This bill was defeated, however, a few days ago, in the House. The physicians have hopes of still passing a bill introduced in the Senate.

Washtenaw County Medical Society.—At the 126th regular meeting of this society, held at Ann Arbor, Mich., March 17, Dr. Geo. Dock read a paper on "Some Observations in Camp Hospitals," dealing more particularly with the different phases of typhoid fever as presented at the Sternberg Hospital. Dr. John A. Wessinger showed a specimen of hygroma prepatellaris, which he had recently removed from a patient. The specimen was interesting on account of its unusually dense walls. Dr. Flemming Barrow was elected delegate to the AMERICAN MEDICAL ASSOCIATION meeting at Columbus, and authorized to select his four associates. A committee was appointed to invite the Wayne County Medical Society to Ann Arbor to visit the University of Michigan Medical Department. Special clinics will be held on this occasion.

Wayne County Medical Society.—At the regular meeting, March 23, 1899, Dr. M. Aronstam read a paper on "Marriage from a Medicolegal Standpoint." His object in presenting the paper was to review the evil conditions of life which are dependent upon the marriage and intermarriage of persons who have constitutional taints or inherited weaknesses of either mind or body, and to propose measures for the amelioration of these evils. The means that the author would like to see carried into effect were considered under three heads: 1. Moral suasion, the inculcating of pure and upright principles by precept and example of physicians and others who are able to wield a powerful influence upon the young. 2. The regulation of prostitution by law. 3. The absolute control and supervision of marriage contracts by the government. This implies the actual examination, physical and mental, of both contracting parties, by a responsible and efficient physician, upon whose report a license to marry would be granted or refused according as the report was favorable or not.

Detroit Academy of Medicine.—At the last regular meeting, Dr. Albert B. Lyons read a paper on "The Conservatism of Our Nineteenth Century Civilization." It was pointed out that the present massing of the population in the cities is a serious question, especially when the children are considered. The leaders of the cities are now largely country bred, but this must soon cease. Hence, the city-bred boy must be taught along the line that his country cousin has used, viz., must be brought more closely in contact with nature and with manual labor in his education. This question is one that concerns the physician, who should be the leader and director of the physical side of education. Our schools aim to develop the mental side alone, when they should develop the moral and, at any rate, the physical. While the manual-training idea is good, what our boys need most of all is to come in contact with untamed and untrained nature. The use of hoe and rake is preferable to gymnastics. Work on the streets and lawns and in public parks might give this contact, but there must be training to habits of helpfulness and not so much theoretic cramming. Another menace to present civilization is the alarming decrease in the size of families, not from lack of procreative power, but because the parents fear that a large family can not be properly supported, or because the wife is unwilling to forego her social pleasures long enough. Physicians should take a decided stand on this question and be most careful not to lead patients astray in sexual matters.

Hundred Year Club.—This society, recently organized in New York City for the promotion of longevity, based on the study of its physical and mental phases and the circumstances of heredity and environment, held its first general meeting March 23. The views of many of the individuals assembled on this occasion appeared to be somewhat too diverse and incongruous to offer much expectation that the high aims expressed will to any extent be realized, but, at all events, the object of the club is a laudable one, and possibly some good may be accomplished. Dr. W. H. Wiley, chief chemist of the U. S. Department of Agriculture, who had previously been elected president of the club, read a paper on "What Chemistry Has Done for Longevity in the Past Twenty-five Years," and expressed the opinion that the time is coming when men and women will be fed from infancy for the profession or occupation they are to follow. Other papers were by Dr. George W. Grover, on "The

Eclipses that Shorten and the Lights that Lengthen the Sum of Human Life," and L. H. Bailey, professor of horticulture in Cornell University, on "Science and the Farmer;" also an address by Rev. Dr. Joseph Silverman, a well-known New York rabbi, on "Longevity Among the Hebrews." He attributed the long life and freedom from epidemics, enjoyed by that race in past centuries, to the observance of the Mosaic laws, and stated that to the Jew his religion was a philosophy of life. Incidentally he spoke of the latter as the only real cosmopolitan, who could live in any country and enjoy health in any climate.

Berlin Tuberculosis Congress.—The German central committee for the erection of sanitaria for consumptives has issued a call for a congress to be held in Berlin, Germany, May 24–27, 1899 (vide JOURNAL, p. 139), for the purpose of discussing the subject of tuberculosis. The congress will meet in the new building of the Imperial Diet and is under the patronage of Her Majesty, the Kaiserin, while Prince Hohenlohe, the Imperial Chancellor, will serve as honorary president. All of the German states, also local authorities, medical faculties and societies, and all corporations interested in fighting tuberculosis have been requested to send delegates, and all foreign countries represented at the imperial court have also been invited to take part. The United States embassy has been requested to extend a cordial invitation to American physicians to become members of the congress, and the same invitation has been extended through other missions to physicians of other nationalities. As basis for discussion, papers will be presented as follows: "Distribution and Extent of Tuberculosis," by Geheimrath Koehler, director of the imperial health office, and Geheimrath Krieger of Strassburg; "Etiology," by Professors Robert Koch and B. Fraenkel of Berlin; "Prophylaxis," by Professor Gerhardt and Generaloberartzt Schjerning of Berlin; "Therapy," by Professor von Ziemssen of Munich and Professor Schroetter of Vienna; "Sanitaria," by Herr Gaebel, president of the imperial insurance office, Berlin, and Dr. Dettweiler of Falkenstein. Following the presentation of the two leading papers—limited to twenty minutes each—in the respective divisions, there will be a general discussion, speakers being limited to ten minutes each. All papers and remarks are to be in German, although the chairman is empowered to make exceptions during the general discussion. All persons interested in the subject of tuberculosis are eligible for membership; membership cards (20 marks, nearly $5) are to be obtained at the office of the congress (Bureau des Organisations-Komites, Wilhelm Platz 2, Berlin, W) and entitle the holder to a copy of the Proceedings. An early registration is requested. There are undoubtedly many American practitioners especially interested in tuberculosis, and possibly some laboratory workers, and should any such desire to attend the congress, yet prefer to receive a personal invitation, the writer will be pleased to forward the names of such persons, upon proper introduction, to the executive committee of the congress. As "proper introduction" will be considered a letter from any recognized medical, scientific, or veterinary faculty, or society. Ch. Wardell Stiles, Ph. D., Scientific Attaché, U. S. Embassy, Berlin, Germany.

Public Health.

Variola in New Orleans.—There have been reported in New Orleans, La., to March 23 inclusive, 100 cases of variola, of which 15 have been discharged and none have died; 85 are still under treatment.

Detroit Health Report.—For the week ending March 25, 1899, deaths numbered 95, under 5 years 38. Births were: male 43, female 42. Contagious diseases: diphtheria, last report 7, new cases 6, recovered 5, now sick 8; scarlet fever, last report 24, new cases 5, recovered 7, 22 now sick.

Dietetic Preparation.—In the *Toledo Med. and Surg. Reporter* (March), E. J. Rose advocates the use of maltine as an ideal dietetic preparation in wasting or malnutrition, as in phthisis, where there can not be much bodily exertion and a larger proportion of carbohydrates is required. Tests show that its diastasic strength is sufficient to produce four times its weight of maltose and probably, taking account of other intermediate products, considerable additional quantity of soluble starch and dextrin. It is, he holds, an agent of value, in the forms of indigestion that depend upon inability to convert and assimilate starchy foods.

Climate on Deleterious Effects of Alcohol.—Prof. J. A. Sikorsky publishes some surprising statistics in regard to the differences observed between the southern and northern provinces of Russia in the number of fatal accidents due to abuse of alcohol. Averaging 15 to 22 per thousand inhabitants in the South, they range from 70 to 110 in the North, although the consumption is almost a liter less per capita. These statistics are particularly valuable for comparison, as the alcohol is universally taken in the same form, brandy. He draws the conclusion that external cold increases the toxic effects of alcohol by tripling the chances of intoxication.—*Semaine Méd.*, February 22.

Medical Practice in Illinois.—The following is a proposed amendment to the law concerning corporations, which is likely to pass the Illinois Senate at the present session of the Legislature. It is more likely to pass both houses of the Legislature than is the bill noticed in the daily press, which provided that all degrees and diplomas should be under the supervision of the State University. After stating the method of organizing a corporation, the amount of fees, etc., the amendment goes on to say:

> And provided further, that the Secretary of State is hereby empowered and it shall be his duty to revoke charters issued to corporations which authorize such corporations to confer degrees, diplomas or other certificate or certificates of qualification in the science of medicine, pharmacy or dentistry upon the recommendation of the attorney-general, such recommendation to be accompanied by affidavit that such corporation is conducting a fraudulent business or violating the terms of its charter; or the attorney-general may in his discretion file a bill in chancery in the name of the People of the State of Illinois, against any corporation conducting such fraudulent business or violating the terms of its charter, in any court having jurisdiction of the corporation and subject-matter of such bill and for an injunction to restrain said corporation from conducting its business fraudulently or violating the terms of its charter; and also for the dissolution of said corporation and thereupon it shall be the duty of the court in which said bill is filed to hear and determine the same as in other cases in chancery.

Three other bills of interest to the medical profession: one establishing an epileptic colony; one amending the pharmacy act so as to allow physicians of eight years' practice to act as pharmacists; and one placing local water-supplies under the control of the board of health, were reported upon unfavorably in committee.

Tuberculosis and Altitude.—In a recent work published in Mexico (*La vie sur les hauts plateaux*), which won the Hodgkins' prize of the Smithsonian Institute, Herrera and Lope devote a chapter to the treatment of tuberculosis by altitude, noteworthy in many respects. They find that statistics show that not only in men but in lower animals tuberculosis is decreased in high regions. In 1885, out of 73,000 cattle killed in the general abattoir of the city of Mexico, only forty-five were tuberculous. This favorable effect they attribute to the higher solar illumination in high altitudes and the dryness and coolness of the atmosphere as working against the existence of microbes. The benefits of rarefied air in consumption are given by the authors from their experimental and other observations, as follows: 1. Lessening pressure increases the circulation of air in the lungs, dilates them and obliges torpid parts to functionate. 2. Lessening pressure determines a greater quantity of blood in the lungs. 3. Lessening pressure permits a uniform distribution of blood, regulates its circulation and

combats congestion. 4. Lessening pressure diminishes intrapulmonary tension in general and particularly intravascular tension. 5. Augmentation of red and white globules. 6. Desiccation of mucous surfaces; the favoring of evaporation. Besides experiments on animals, observations of actual cases of tuberculosis, treated by rarefied air, are reported by the authors. Of 13 cases thus treated only 1 lost weight, 1 remained stationary, and 11 notably increased, 1 increasing 300 grams in one day. In none, either healthy or tuberculous, were the alarming symptoms described by Paul Bert experienced.

Antitoxin Treatment of Diphtheria.—The advance sheets of the forthcoming *Bulletin* of the Chicago Health Department give an interesting statement, in continuation of that heretofore given, of the experience of the department in the antitoxin treatment of diphtheria. The record of the treatment for the past four months (November and December, 1898, and January and February, 1899) is even better than that heretofore published, showing a reduction of mortality to only 4.78 per cent. in 418 cases. There was no death in 129 cases treated with antitoxin in the first or second days of the disease, and there were only three among 114 treated on the third day, a percentage of 1.23 in a total of 243 cases treated in the first three days from the onset. These records deal exclusively with the gratis treatment of diphtheria among the poor and under the most unfavorable conditions, and do not include the cases removed to hospitals. Thirty-eight, or 9 per cent. of the cases, required intubation, with 30 recoveries and 8 deaths, a mortality percentage of 21 or less than two-thirds of the average death-rate of all cases before the introduction of the antitoxin treatment. The constantly decreasing mortality statistics also indicate that the use of the antitoxin treatment is increasing in private practice and that Chicago physicians are employing this method more generally and successfully than any similar number of their profession in any part of the world. The *Bulletin* will contain a diagrammatic curve showing the actual number of deaths from diphtheria and croup by monthly average from 1886 to 1895 (the preantitoxin period of the records), and one of the three years period (antitoxin), 1896–8, which shows the difference very strikingly. The Commissioner, Dr. A. R. Reynolds, takes occasion to give credit to Dr. F. W. Reilly, whose efforts to arouse interest in the treatment through the JOURNAL and the daily press instituted the present system, the striking success of which is above detailed, and to the staff which have so successfully carried it out. Other matters of interest are data as to the already effected sewage diversions and the method of disease-notification adopted, that of allowing the physician to assume responsibility in cases of infectious disease and to issue warning handbills instead of placarding the houses. Dr. Reynolds has sent to the Associated Press a letter denying absolutely the correctness of the alleged statements of Drs. Crosby and Biggs of the New York Health Board, as reported in the *New York Times* of March 22. They are reported as testifying that an inferior quality of diphtheria antitoxin was sold to the Chicago health authorities after rejection by the New York Board. The results of antitoxin treatment in Chicago would not appear to be those of an inferior quality of the remedy and support Dr. Reynolds' contention. It seems certain, if they were correctly reported, that Drs. Crosby and Biggs must have made a mistake.

Health Reports.—The following cases of smallpox, and yellow fever, have been reported to the Supervising Surgeon-General of the U. S. Marine-Hospital Service for the week ended March 18, 1899:

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 17, 2 cases.
California: Los Angeles, March 4–11, 10 cases, 1 death.
District of Columbia: Washington, March 18–23, no new cases.
Florida: Jacksonville, March 4–18, 1 case; Key West, March 12, 1 case.
Indiana: Evansville, March 13, 1 case.
Kansas: Atchison County, March 16, 21 cases; Independence County, March 16, reported; Sumner County, 2 cases.
Kentucky: Louisville, March 9–16, 26 cases, 2 deaths.
Louisiana: New Orleans, March 4–11, 57 cases.
Mississippi: McLaurin, 3 deaths.
Missouri: St. Louis, March 15, 10 cases.
Montana: Missoula, February 23 to March 9, 2 cases.
New York: New York City, March 11–18, 2 cases, 1 death.
Ohio: Cleveland, March 11–18, 17 cases.
Texas: Laredo, February 25 to March 4, 59 cases, 19 deaths.
Virginia: Alexandria, March 15–22, 2 cases, no new cases; Norfolk, March 15–21, 13 cases.
Wyoming: Cheyenne, March 4–11, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, February 11–25, 3 cases; Rio de Janeiro, February 3–10, 5 cases, 4 deaths.
China: Hongkong, January 28 to February 4, 3 cases, 1 death.
England: London, February 18–25, 2 cases.
Mexico: Chihuahua, February 25 to March 18, 5 deaths; Mexico, February 26 to March 5, 6 cases, 1 death; Vera Cruz, March 2–16, 1 case.
Russia: Moscow, February 18–25, 7 cases: St. Petersburg, February 18–25, 12 cases, 3 deaths; Warsaw, February 18–25, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, February 3–10, 65 cases, 50 deaths.

Book Notices.

Elementary Physiology. By BENJAMIN MOORE, M.A., Professor of Physiology in the Medical Department of Yale University; late Sharpey Research Scholar, and assistant Professor of Physiology, at University College, London. With 125 illustrations. New York: Longmans, Green & Co. 1899. Price $1.20.

Though an unpretentious volume of less than 300 pages, this book contains all the elements of physiology written in a style that is interesting and, which is of most importance, easily understood by the class for whom, the author says in his preface, it was written—"those who have no previous knowledge of the subject." The introductory chapter on the fundamental and simple forms of life is especially to be commended for the simplicity and yet completeness in which the subject is handled. One can not but wish that such a book might be used in our public schools rather than the trash that is too often found in the hands of pupils, and labeled "physiology." The book will be a useful one for the medical student to take up before entering on a more extended course.

The Serum Diagnosis of Diseases.—By RICHARD C. CABOT, M.D. Physician to Outpatients, Massachusetts General Hospital. New York: William Wood and Co., 1899. Price $1.50.

One of the results of the labor and thought which have been put upon the investigation of immunity has been the development of the method of serum diagnosis. While the paper of Widal, read less than three years ago, on the serum diagnosis of typhoid, brought the possibility of this method, previously known to but few, before the medical world, and while much work has been done and many papers published in the medical journals of the world since then, still the theories and methods are but little understood and appreciated by the vast majority of medical men. While the author says in his "Prefatory Note" that the book is nothing but a compilation, that its aim is to bring together in convenient form the results of the immense amount of work which has been done upon serum diagnosis, still he has done much more; by a thorough description of the methods and technic used he has made it possible for all to apply this means of diagnosis, which, though by many thought to be difficult, is readily understood and easily carried out. Very little apparatus is necessary, little more than a good microscope being demanded.

The writer recognizes three methods of demonstrating the clump reaction; the microscopic or quick test of the fluid serum or blood; the microscopic or quick test of the dried blood, and the macroscopic or slow test. He believes that either of these has its advantage as well as disadvantage, and endorses the view promulgated by the committee of the Section on Medicine of the AMERICAN MEDICAL ASSOCIATION, at the meeting in Philadelphia, that each observer should select some one method and stick to it, so that by experience in a large number of cases he may become thoroughly familiar with its workings.

The author is to be congratulated upon the excellent manner in which he has performed the task of putting into compact form the present knowledge of the subject of serum diagnosis, and that too in such a way that it can be made of practical value to those who are anxious to understand and use it.

A Practical Handbook on the Muscular Anomalies of the Eye. By HOWARD F. HANSELL, A.M., M.D., Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic, etc.; and WENDELL REBER, M.D., Instructor in Ophthalmology, Philadelphia Polyclinic, etc.

The subject-matter of this little book of 182 pages is, according to the preface, an elaboration of a short series of lectures delivered in successive winter courses at the Philadelphia Polyclinic.

The anatomy and physiology of the ocular muscles are briefly reviewed in the introductory chapters, and the subject of ocular palsies is discussed in the second part.

By far the greatest space is given to the consideration of functional anomalies of the eye muscles, and here it is pleasing to note that the authors have taken fairly conservative ground and do not care to be classed with that band of enthusiasts who claim to cure everything from alopecia to zoster by snipping the eye muscles.

Some influence in the causation of heterophoria is ascribed to general nervous conditions, and some emphasis, very properly, is placed upon the due consideration and treatment of such conditions.

The different tests for determining the relative strength of the muscles are very clearly described, and the treatment that has proven satisfactory in the hands of the authors very tersely outlined.

Proceedings of the American Medico-Psychological Association. Cloth. Pp. 417. Published by the Association. 1898.

This volume contains the proceedings of the fifty-fourth annual session, held in St. Louis, Mo., May 10-13, 1898, together with list of members and officers, a "Geographic Distribution of Members and Institutions," the constitution, and memorial notices of the following members: William Palmer Jones, James Olmstead, H. A. Buttolph, George Allen, R. H. Moffitt, Hugh F. McNary and Julia K. Cary. The papers included number twenty-five.

American Year-Book of Medicine and Surgery. Under editorial charge of GEORGE M. GOULD, M.D. Illustrated. Cloth. Pp. 1102. Philadelphia: W. B. Saunders. Chicago: W. T. Keener. 1899. Cloth, $6.50; half morocco, $7.50.

The preparation of this year-book, annually, is no small task, but the present volume is up to the usual high standard. We miss the name of the late Dr. William Pepper from the list of contributors, although his work has been creditably taken up by Drs. Alfred Stengel and D. L. Edsall. Other contributors to the volume are Drs. Samuel W. Abbott, John J. Abel, J. M. Baldy, C. H. Burnett, Archibald Church, J. C. DaCosta, W. A. Newman Dorland, Louis A. Duhring, V. P. Gibney, H. A. Griffin, J. Guitéras, C. A. Hamann, A. Hand, H. F. Hansell, M. B. Hartzell, Barton C. Hirst, E. Fletcher Ingals, Wyatt Johnston, W. W. Keen, H. G. Ohls, Wendell Reber, David Riesman, Louis Starr, G. N. Stewart, J. B. Tillinghast and J. Hilton Waterman. A number of full-page plates add much to the value of the work, which should be in every practitioner's library, as its title indicates, aiming to present the advances in all departments of medicine during the year just past.

Ready Reference Handbook of Diseases of the Skin. By GEORGE THOMAS JACKSON, M.D. (Col.), Professor of Dermatology, Woman's Medical College of the New York Infirmary and in the Medical Department, University of Vermont, etc. Third edition, revised and enlarged; 75 illustrations. Cloth. Pp. 647. New York and Philadelphia: Lea Brothers & Co. 1899.

In preparing this, the third edition of his work, the author has revised the text thoroughly to accord with dermatologic advances since former editions, and given the reader entire new sections on bulpiss, bunion, Roentgen ray dermatitis, blastomycetic dermatitis, lupus pernio, pityriasis alba atrophicans, and idiopathic multiple pigmented sarcoma. An appendix contains formulæ. Throughout the work, symptomatology, diagnosis, and treatment have received greater consideration than etiology or pathology, and, as in former editions, the arrangement of the different diseases is alphabetic.

A Compend of Human Physiology, especially adapted for the use of Medical Students. By ALBERT P. BRUBAKER, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College: Professor of Physiology in the Pennsylvania College of Dental Surgery, etc. Ninth edition, revised and enlarged. With new illustrations and a Table of Physiologic Constants. Philadelphia: P. Blakiston's Son & Co. 1899. Price $.80.

This is one of Blakiston's "Quiz Compends," and its continued popularity is evidenced by the fact that another, the ninth edition, is called for. The author has taken advantage of this new edition to revise many parts and bring every subject up to date. The table of physiologic constants will be found of great value to the student, since it compresses into a very small space most of the important facts included in the subject of physiology.

Necrology.

EDWARD A. LOGAN, M.D., according to a press despatch, perished on the Valdes glacier at an uncertain date. He was born in Springfield, Ill., and some eight or ten years ago went to New York and was graduated from the College of Physicians and Surgeons, New York city, about five years ago. While attending lectures he lived in Orange, N. Y., and there married a daughter of the Hon. Thaddeus W. Collins, of Lyons, N. Y. The couple went to Louisville, Ky., where Dr. Logan began practice. Afterward he removed to Denver, Col., then went to Alaska in the employ of a syndicate for the exploration of the Copper River region, his wife returning to her present residence in Springfield, Ill. On August 10 of last year, he was reported just inside the coast line, about 35 miles from Valdes, at First Timber, prospecting.

SIGISMUND WATERMAN, M.D., died in New York, March 15. He was born Feb. 22, 1819, in Bruck, near Erlangen, Germany, and came to this country in 1840. While professor of modern languages at Yale he began the study of medicine, and in 1848 was graduated with high honors. Then after arriving in New York he began practice, and in 1857 was appointed a police surgeon, a position from which after thirty years' service he was retired on account of age. During the Civil War he was a draft surgeon with an unexceptional record. He is also credited in 1868 as having introduced the study of spectroscopic analysis into the practice of medicine. Prominent in Hebrew circles, he was identified with many philanthropic interests; was singularly unselfish, and although an accurate diagnostician, contented himself with the society of the quiet members of the profession.

WASHINGTON AYERS, M.D., San Francisco, Cal., died on February 15. Dr. Ayers had for many years been a member of the Academic Senate of the University of California, at

which institution he held the professorship of hygiene. He had also been president of the State medical society and was 76 years of age. He studied medicine at Harvard in 1847, going to California during the gold excitement of 1849.

GEORGE R. ORWIG, M.D., Cleveland, Ohio, died of cerebro-spinal meningitis, March 14. The doctor was 44 years of age a graduate of Jefferson, 1876, and member of the Cleveland and other medical societies.

WILLIAM W. VANARSDALE, M.D., Leipsic, 1883, of New York city, died at Atlantic City, N. J., March 17. He was a visiting surgeon at Mt. Sinai and New York Cancer hospitals and at the time of his death had been only recently married.

JOHN HENRY SEABURG, M.D., College Physicians and Surgeons, New York city, 1872, died at his home in Yonkers, N.Y., March 16, aged 51 years. He was at one time a medical examiner for several life insurance companies.

WILSON J. REINHARD, M.D., Jefferson, 1885, died in Hellertown, Pa., after receiving a cocain injection in one of his arms, March 13. The death was attributed to the puncture of an artery.

JEREMIAH WILSON, M.D., died in Alexandria, Pa., March 8, aged 65 years. He was an alumnus of the University of Pennsylvania and a successful portrait painter.

DELANO AMES, M.D., Baltimore, Md., died March 10, aged 31 years. Dr. Ames was a graduate of the Johns Hopkins University and of the Medical School of the University of Maryland, and was formerly director of the pathologic laboratory of the Baltimore Medical College. At the time of his death he was pathologist of the Union Protestant Infirmary.

MARTIN NURRUP, M.D., Philadelphia, Pa., died at the Jewish Hospital a few days ago, of purulent meningitis. The Doctor was a graduate of the College of Physicians and Surgeons, Baltimore.

AMOS ALLEN, M.D., Berkshire Medical College, Pittsfield, Mass. (now extinct), 1846, of Grafton, N. Y., died in Canarsie, N. Y., March 8 . . W. G. Brooke, M.D., Ellsworth, Ohio, March 10, aged 73 years. . . C. E. Chamberlayne, M.D., Middleburg, Va., March 12, aged 52 years . . John M. Dunlap, M. D., Medical College of Ohio, Cincinnati, 1859, of Indianapolis, Ind. died March 14, aged 70 years . . Frederick P. Muffe, M. D., San Francisco, Cal., March 10, aged 50 years . . Ermine Powell, M. D., Chicago, March 10.

Miscellany.

To Establish Value of Services.—The supreme court of Tennessee holds, in Camp vs. Ristine, that in an action instituted by a physician, to recover a bill for professional services, the expert testimony of other witnesses to show the value of the services is admissible.

Pseudo-Hermaphroditism.—Neugebauer reports the unique case of a well-formed woman normal in all other respects, with a penis between the vulva and anus. The penis is on the median line, 52 mm. in length, and resembles the normal penis in every particular; noted by him during normal childbirth.—*Cbl. f. Gyn.*, February 4.

Silicic Acid in the Pancreas.—Künkle states that the pancreas serves as a receptacle for silicic acid, which is stored in this organ as iodin is stored in the thyroid gland, the pancreas in cattle containing several milligrams. It also forms .1 per cent. of the hairs, where its mechanic purpose is evident.—*Vienna Klin. Rund.*, February 19.

Compensatory Hypertrophy in Renal Pathology.—In nearly every case of renal lesions the invasion of the organ is gradual, and Albarran and Chauffard have established that the sound remainder becomes hypertrophied and compensates the diseased portion. There is no new formation, but merely the growth and development of existing elements.—*Presse Méd.*, February 22.

Mountain Sickness.—Professor Mosso, in a recent work, attributed the well-known mountain sickness to an actual decrease of carbonic acid in the blood, on the theory of acapnia, which assumes that this is the normal exciting agent of the discharge of the bulbar centers. Mountain sickness is, therefore, an asphyxia dependent on a lack of carbonic acid.

Not Accidental Death.—In the case of Feder vs. Iowa State Traveling Men's Association, the supreme court of Iowa holds, February, 1899, that the death of an insured person, caused by the rupture of an artery while he was attempting to close the shutters of a window, was not "accidental," within the meaning of a policy of insurance.

Removal of Double Fish-hook Lodged in Throat.—A drawing and description of the extraction of a double fish-hook from a boy's throat, by Sir R. Christisen in 1819, was recently exhibited at a meeting of the London Society of Laryngology. A ball of ivory was hollowed out on one side to fit over the prongs of the hook. The ball was then pushed down over the hook, which released the tips, when the whole was drawn out together by the fish-line still fastened to the hook.—*Rev. de Laryng.*, February 18.

Spontaneous Luxation of a Cataract.—J. Ramos communicated to the Mexico Academy of Medicine, February 1, the observation of a man of 58, who had refused an operation for his cataract—the other eye blind from staphyloma—trusting in God for relief and spending hours in the cathedral praying. In the course of his numerous genuflexions a spontaneous luxation of the cataract occurred, restoring his sight. Galezowski has reported a similar "miracle" occuring in the cathedral at Paris.—*Gaceta Méd.*

X-rays in Military Surgery.—Major J. Battersby, in a paper read before the Roentgen Society, London, January 10 (*Nature*), stated that after the battle of Omdurman, out of twenty-one cases in which the bullet could not be located by ordinary means, it was satisfactorily diagnosed as to position by the X-ray. The twenty-first case was too ill for the test. In many cases the patient was saved much suffering by this means. The motor power used was a small dynamo operated by a tandem bicycle, which answered admirably.

Phonendoscopy of Organs in Turkish Bath.—The lungs and heart gradually dilate in all directions in the course of fifteen minutes in the hot room at 50 C., and in three minutes at 80. The stomach also dilates if it is empty and, if not, expels the contents. Passing into the cold rooms the organs rapidly contract, followed by a gradual return to normal, except the stomach, which remains contracted. The liver, spleen and intestines also dilate, but in a much less degree.—Paris Academy of Sciences, Session of January 30.

Artificially Purified Air.—Referring to Laborde's announcement that he had discovered a chemic substance that would absorb carbon dioxid and generate oxygen at the same time, d'Arsonval calls attention to his announcement several years ago that he had realized these conditions by the mutual decomposition of oxygenated water and chromic acid. Tests with these substances demonstrated that animals could live and thrive in a hermetically closed chamber with the air artificially purified by the mutual action of these substances (vide JOURNAL, p. 445). —*Presse Méd.*, February 22.

Women Physicians in Europe.—Germany thinks the time is not yet ripe to admit women to the universities on an equality with men, especially to the medical department, and France, although she allows them equal matriculation privileges, has refused to inscribe a woman lawyer, and the Faculty of Medicine has denied the petition of a woman physician to open a "free course" in ophthalmology. Roumania has also recently

excluded women from the positions of "rural physicians" (paid by the State), and also of physicians to hospitals, except those with special pavilions for women. Berlin has, however, recently appointed women physicians for the compulsory examination of prostitutes.

Depopulation of Pacific Islands.—Dr. Tautain (*L'Anthropologie*, 1898, No. 4; *Science*, February 10) finds the following as the chief causes of the decrease of population of the Marquesas Islands (French): 1, leprosy, which leads to impotence and sterility; 2, tuberculosis, which is eminently contagious and destructive; 3, syphilis, which is less marked than might be supposed; 4, licentiousness, the consequences of which are very visible in developing metritis and sterility or abortion. This last is the most injurious of all causes, and Dr. Tautain places it as the principal factor in leading to the diminished natality. The total absence of sexual morality operates in many directions to undermine the viability of the race.

Asylum Entitled to Pension of Lunatic.—Kentucky has a statute providing that the board of commissioners of a lunatic asylum may recover the amount of a patient's board where it is ascertained that the latter has, or shall acquire, an estate, the sum realized to be covered into the public treasury. Under this statute, the court of appeals of Kentucky holds, in the case of Western Kentucky Asylum vs. White, that a lunatic asylum is entitled to subject the money arising from a pension allowed a patient to the payment of its claim for board, and whatever sum may be recovered goes into the public treasury, for the purpose of reimbursing the State for the expense incurred in the maintenance of the lunatic while confined in the asylum.

Examination of Recruits for the Army.—General Orders No. 47 from the headquarters of the army, issued March 15, 1899, modify the regulations concerning the fees to be paid to civilian medical men for the examination of recruits. From June 17, 1898, the compensation was only forty cents per man examined, whether accepted or rejected. The new regulations are more liberal. In the absence of a commissioned medical officer or contract surgeon, recruiting officers are authorized to employ a civilian physician to make the examination of recruits preceding enlistment required by army regulations, at the following rates of compensation: For the examination of a single recruit, $1; of two recruits on the same day, $1.50; of three on the same day, $2; of four on the same day, $2.50, and 40 cents for each recruit over four examined on any one day. At recruiting stations where a large number of recruits are to be examined, or when a recruiting officer goes from place to place for the purpose of securing recruits, application will be made to the surgeon-general for authority to employ a physician by the month under contract. When a recruiting officer who has employed a contract surgeon under proper authority is ordered from place to place to make enlistments, he will give the contract surgeon proper written orders in advance to accompany him for the purpose of examining recruits, naming the places to be visited, and stating in the order that the travel enjoined is necessary for the public service.

Liability of County for Medical Relief of Pauper.—Counties owe no other duties to the poor and incur no other liabilities for their support than those imposed by statute. Therefore, to entitle one to recover from a county for services or supplies furnished to a pauper to whom such county owes the duty of support and care under a State statute, the supreme court of North Dakota holds, it must appear that the services rendered and relief given were in pursuance of an authorization proceeding from some one having authority to bind the county. Here was an action brought by the St. Luke's Hospital Association against Grand Forks County, to recover for care, nursing, board and lodging furnished an alleged pauper. For the purpose of this decision, it was conceded that the support was given as alleged, to one to whom, under the statutes, the defendant county owed the duty of extending relief. But the complaint did not state that such relief was extended at the request or instance of any one having authority to bind the county. On the other hand, it showed affirmatively that the authorization was refused on behalf of the county. Under these facts, the supreme court maintains that the complaint failed to set out a legal liability.

Pathogenic Capacities of Saprophytes.—The *Annals of the Paris Institute* for December, 1898, contains the report of experiments by Prof. Vincent with the bacillus megaterium and the bacillus mesentericus vulg., which establish that bacteria possess such a capacity for adaptation in certain conditions that they can gradually develop from their saphrophytic condition into pathogenic germs, although possibly retaining the tendency to return to their original condition. Cultures of these bacilli introduced into the peritoneum of animals in collodium sacs attained such virulence in the course of six passages, that they affected animals like the most energetic poisons, causing death by acute septicemia or without local processes. These facts explain the revival of epidemics and the spontaneous evolution of diseases. If some hitherto harmless microorganism finds in some animal for the first time the appropriate conditions for its further development, and if opportunity offers for further passages, as in the experiments, then the saprophyte becomes pathogenic and a new infective disease is evolved. They also confirm the assumptions of Pasteur, Chamberland and Roux that a virus may become attenuated and then reacquire virulence.

Medical Matters Regulated by a Military Officer.—The following general order, No. 28, issued Feb. 18, 1899, by Gen. Guy V. Henry, from the headquarters of the Department of Porto Rico, is of interest in showing how far away from military affairs the duties of army officers have been carried by the successful issue of our war with Spain:

1. The sub-delegation of medicine and surgery is authorized in accordance with orders of the Spanish Government dated May 29, 1866, to grant certificates of practitioners in minor surgery, provided the requirements in said order shall have been filled.

2. All certificates of surgeon-dentists, issued by the said sub-delegation understood as entitling the holders thereof to perform the duties of doctors in dental surgery not being authorized by said Spanish orders, are hereby declared null and void.

3. The holders of these certificates shall return them within ten days to the sub-delegation of medicine and surgery, where they shall be exchanged for certificates of practitioners in minor surgery.

4. Those who at the end of the time indicated shall not have exchanged their certificates and continue practicing medicine in spite of the orders given, shall be called up by the mayors of the respective places, who will compel them to deliver the certificates, and besides levy a fine of $50 on every certificate holder.

5. The practitioners of dental surgery shall be allowed to practice only under the supervision of a doctor in dental surgery.

Not an Insurer.—The supreme court of Minnesota says that a physician or surgeon is not an insurer that he will effect a cure. Neither is he required to come up to the highest standard of skill known to the profession. When he accepts professional employment, he is bound to exercise only such reasonable care and skill as are usually exercised by physicians or surgeons in good standing of the same school of practice. And where any person claims a cause of action for neglect to exercise the required degree of care or skill, the court adds, in Martin vs. Courtney, that the burden is upon him to prove such neglect. In this case, it goes on to state, perhaps the most serious charge against the defendant was in not making a second amputation at the ankle. Concerning this, the court says that he was required to exercise ordinary professional skill and judgment in determining what was best to save the patient's life, but conservative surgery required that as much of the foot as possible

should be saved. A surgeon, under the circumstances, had to take into account the great value of a foot, especially to a laboring man. In determining where to make the amputation he would also have to take into account the degree, as well as the extent, to which the foot was infected; also the general health of the patient and his power to throw off or resist disease; and then, in view of all these considerations, act in accordance with ordinary and reasonable professional skill.

Dinner by ex-Resident Physicians of the Pennsylvania Hospital.—At the University Club, Philadelphia, on the evening of March 11, about sixty of the ex-residents and medical officers of the Pennsylvania Hospital sat down to a dinner, at which Prof. J. M. DaCosta, the senior attending physician, acted as toastmaster, and Dr. J. A. Scott was chairman of the committee on arrangements. The oldest living resident physician, Dr. Alfred Stillé, was unable to be present. To Dr. John Ashhurst, who was prevented from attending on account of sickness, a message of sympathy was ordered to be sent. Short speeches were made by Dr. Thos. G. Morton, Dr. John H. Packard, Dr. Horatio C. Wood, Dr. Thos. H. Andrews, Dr. Geo. C. Harlan, and others. Dr. Morton's remarks contained the following interesting medical reminiscences:

My earliest remembrance of the Pennsylvania Hospital was when a boy of perhaps 10 years of age, and I did not revisit it until as a medical student, in 1856, I attended the course of clinical lectures held in the old operating room or "theater," as it was called, on the third floor of the center building. There I had the opportunity of listening to Gerhard, Wood, the senior William Pepper, Neill, Joseph Pancoast, and Peace. Occasionally, we were taken into the surgical wards, rarely into the medical, but when this was done, the dignified James Brice, the head nurse, always showed his disapprobation of the invasion of the ward by the students, by his haughty demeanor. Brice will always be remembered by those under whom he served. He was a faithful and most efficient nurse and his ward was always kept in perfect order. My own sojourn at the Pennsylvania was most pleasant and, indeed, how could it have been otherwise. There was plenty of work, the surgical wards being especially interesting. In the medical ward I remember that there were several cases of typhus and yellow fever.

My chief at the hospital for a considerable time was Joseph Pancoast, whose surgical skill impressed me profoundly. He served the hospital ten years. On Feb. 29, 1864, I was agreeably surprised to receive from him the following note:

MONDAY MORNING, Feb. 29, 1864.

My Dear Doctor:—According to promise, I announce to you my intention of resigning my place in the Pennsylvania. I shall send in my resignation this afternoon, and it will give me pleasure to find you my successor.

Yours truly, J. PANCOAST.

The next day I received from the secretary of the board of managers a notice of my election to the medical staff as one of the attending surgeons, accompanied with the following personal note:

Dear Doctor:—I have pleasure to send herewith an extract from our minutes. I hope the "extract" may be as pleasant to take as the most sugared draught the profession can compound. Very truly thy friend, WISTAR MORRIS.

The duties of the position at once brought me into the most acceptable and pleasant intercourse with the other members of the surgical staff, Drs. Norris, Peace and Hartshorne.

Dr. Norris always took charge when his term of service commenced, serving the full time of three months, but Peace and Hartshorne rarely did so, and so, during many years, I had frequently the greater part of the surgical work to perform, in addition to my own.

I performed my first operation before the class and delivered my first clinical lecture immediately after my appointment. The operation was lithotomy, and although I was considerably disturbed by the large audience, and the newness of my position and my youth, all happily went well and my patient promptly recovered.

The wards at that time, and for many years later, were much crowded. Gradually the character of the patients and also of many of the operations changed; whereas formerly ligations of large arteries, cutting and crushing for stone, removal of large tumors, and plastic operations were quite frequent, later those operations became unusual, and the number of major amputations also considerably lessened. The ligations and lithotomy cases probably found their way to the college clinics, and the serious accident cases, which often require amputation, are now taken to the hospital nearest the site of the accident.

Just a word in reference to the comparisons which have been instituted between the past and present system of nursing. In extolling the very efficient system now in vogue, we should avoid being unfair to, or in any way reflecting upon, the past. With nearly twenty years of personal experience with the former or old system of nursing, I desire to state that during the period preceding the introduction of trained nurses in 1876, our hospital patients were generally well nursed by conscientious, faithful, and fairly intelligent male and female chiefs, who by long years of service and experience and training had become qualified for their work. In justice to them, I can say that every order, by day and by night, was properly carried out, and the patients were well and properly fed, and all their wants properly cared for. To all this the remarkable medical and surgical results sufficiently attest.

There is one other point to which I would refer: At that time the walking cases and convalescents assembled at a common table in congregate dining-rooms for their meals, which were served in attractive form, always hot and ample in amount. This moving of patients several times each day out of the wards seemed to be beneficial, and this plan to me appears to be far better than the present one, which requires all of the meals to be brought from the kitchen into the surgical wards, where they are consumed in silence and often among unpleasant surroundings. This method of serving food, besides being wasteful, takes up the time of the nurses without any corresponding gain in experience or nursing.

We would naturally suppose, with all the splendid improvements in the hospital made during the last few years, in new buildings, reconstruction of the old, and the adoption of modern methods of treatment and nursing, that the present mortality rate would stand forth in marked contrast with that of forty years ago.

The figures appear to show that during the last year, from May, 1897, to May, 1898, the surgical mortality rate was 3 per cent., while that of the same period of 1857 to 1858, or forty years ago, was 2.4 per cent. Of the resident physicians of the hospital, who preceded me in service, seven are still living, Dr. Alfred Stillé, who served in 1839, or sixty years ago, being the senior surviving member.

Louisville.

CITY HOSPITAL.—The Board of Public Safety has just ordered a number of changes in the City Hospital, among them some much needed improvements. A ward devoted to the treatment of diseases of children will be established, in which a few private patients may be accommodated, but for the most part it will be for the use of the poor. The amphitheater will be rearranged to enable students to obtain a better view of the arena. A cold storage plant will also be introduced. All the employes will have to sleep outside the hospital after the present month.

STATE BOARD OF HEALTH.—The annual session of the Kentucky State Board of Health was held in the parlors of the Galt House on the evening of March 14, the following being in attendance: Drs. J. M. Mathews, J. M. McCormack, Wm. Bailey, Arch Dixon, J. H. Letcher, G. T. Fuller, and the following visitors, Drs. M. K. Allen, city health officer, B. W. Smock, county health officer, and F. T. Eisenman, state veterinarian. The election of officers resulted as follows: J. M. Mathews, president (re elected) for a term of two years; J. M. McCormack, re-elected secretary for a term of four years. If Dr. McCormack serves to the expiration of the term to which he has just been elected he will have served for twenty years, making him perhaps the oldest State health officer in the country in point of service. A committee composed of Drs. Letcher, Dixon and Fuller was appointed to draft resolutions expressing the sentiment of the board in regard to cerebro-spinal meningitis in the State. The committee reported that the newspaper reports regarding the epidemic in this and adjoining States are very much exaggerated; that the opinion of the board is that the disease is very slightly, if at all, contagious; but that the board recommends the keeping of all premises clean, and the disinfection after all cases of the room in which the sick have been; and that it does not think it necessary to close the schools in any part of the State. Smallpox was also considered, and a resolution introduced by Dr. Bailey provided for the promulgation of the report that there was no danger to outsiders coming to the city, as the epidemic is very light and confined almost entirely to the negro population; but an order was prepared to be placed in all depots in the following cities where some of Louisville's

cases have come from: Cincinnati, Indianapolis, St. Louis and Memphis, which order provides for the issuing of certificates to all colored or other passengers of whom it may be demanded, that they have been duly protected by successful vaccinations. Another important order issued by the board at this meeting was that requiring all physicians who graduate this year after only a three year course in medicine and expect to practice in Kentucky, to take an examination before the board before the issuance of a certificate. Many of the colleges of the South will graduate large classes this year after a three-year course, but before they can practice here they must first pass an examination before the board.

Questions and Answers.

ENGLISH AND SCOTTISH SURGEONS.

ZANESVILLE, OHIO, March 22, 1899.

To the Editor:—Can you tell me where or how I can get the names of the principal English and Scottish surgeons? C. E. DRAKE, M.D.

ANSWER.—There is no official list of the principal surgeons of England or Scotland. The best way we can advise would be to take the names from the references in the leading works on surgery and from such serials as "Sajous' Annual" or its successor. There are some names that are known to all, such as those of Lister, Tait, MacEwen, etc., but there are many who may be called leaders in surgery.

AN ARTIFICIAL CORNEA.

LOS ANGELES, CAL., March 6, 1899.

To the Editor:—Will you kindly inform me to whom I can apply for a description of the artificial cornea and the method of application, with more particulars than I can get from the item in the JOURNAL of Oct. 22, 1898, p. 100. JOHN V. GAFF, M.D.

ANSWER.—If any of our readers can answer the writer's question or state if any fuller account of the method has been published in English, we would be glad to have them do so. The article referred to is on "Artificial Cornea for Leucoma," devised by v. Shröder, and the account of which was published in the *St. Petersburg Medical Wochenschrift* of Sept. 11, 1898.

CONSULTANTS.

ST LOUIS, March 24, 1899.

To the Editor:—In the JOURNAL of March 18, in answer to Quaerens (p. 653) you make this statement: "Instances occur where B could not do otherwise than to take the case." I do not pretend to be an authority, and would like for you to state under what circumstances could it have been right for B to take A's case.

In an experience of twenty years, I have always declined to take charge of a case in which I have been a consultant. In cases where it has been pressed upon me I have always said to the friends, kindly but very firmly: "You can not have my services alone in that case, but if it is agreeable to the attending physician I will be glad to attend the case jointly with him, but under no circumstances will I take charge of the case." In my entire career I fail to recall a single instance in which this failed to have the desired effect, that of the attending physician retaining the case. Another rule to which I have adhered is, not to take charge of the next case of sickness occurring in a family in which I had been a consultant, believing it a breach of confidence bordering on highway robbery to supplant the attending physician in the family before he had a chance to regain the confidence of the family in question. R. H. FINLEY.

ANSWER.—Our correspondent is in the main correct, and if every physician would carry out the same rules of action as he does, the world would be a better one to live in than it is to-day for all of us. But we repeat what we said before, such cases are occurring continually in small villages and the physicians in the case being the best of friends. We repeat, also, that no physician should take charge of a case to which he had been called in consultation without its being done with the free consent of the one at whose instigation he was called. The "Code of Ethics" does not lay down any specific rule for such cases except in so far as Section 4 of Article V covers it.

CHANGE OF ADDRESS.

Bird, J. T., from Detroit, to State House of Correction, Ionia, Mich.
Brueker, C. M., from Tell City, Ind., to 294 Winona Ave., Pasadena, Cal.
Bell, W. H., from Oxford to Hargrove, Ala.
Cox, J. E., from Carson City, Nev., to Bodie, Cal.
Corbin, D. R., from Nashville, Tenn., to Idalia, Mo.
Churchill, A. H., from 1737 Wabash to 2722 South Park Ave., Chicago.
Dean, C. W., from 355 to 133 Prospect, Cleveland, Ohio.
Elmore, R. D., from Topeka, to Nortonville, Kan.
Eastman, J., from 197 to 331 N. Delaware, Indianapolis, Ind.
Gibson, G. G., from Oldebolt to Burnside, Iowa.
Galbraith, A., from 732 to 822 Congress Street, Chicago.
Herman, C. B., from Boyden, Iowa to Grand Rapids, Mich.
Harrison, C. F., from Perry, Ill., to Syracuse, Kan.
Hart, H. H., from 2325 Bush to 123 Ellis St., San Francisco, Cal.
Hering, E. R., from 246 Lincoln to 683 Van Buren St., Chicago.
Hasson, E., from 246 Lincoln to 683 Van Buren St., Chicago.
Matas, R., from 728 Rampart to 2256 St. Charles Ave., New Orleans, La.
Miller, M. L., from Lanesboro to Susquehanna, Pa.
Rietz, P. C., from 1019 Chestnut to Edgar and Illinois, Evansville Ind.
Simpson, W. B., from Galveston, to Red Oak, Tex.
Shevill, E. A., from Nashville, Tenn., to Cookes Point, Tex.
Thompson, G. N., from Keokuk, Iowa, to New Milford, Ill.
Webb, J. A., from Topeka, to Stafford, Kan.

The Public Service.

Movements of Navy Medical Officers.—Changes in the medical corps of the U.S. Navy for the week ending March 25, 1899.

Surgeon C. G. Herndon, detached from the "Richmond" and ordered to the "Prairie."

Surgeon C. T. Hibbett, orders of March 18 revoked; ordered to the "Baltimore" via steamer of April 12 from San Francisco.

Asst.-Surgeon G. F. Freeman, detached from the "Vermont" and ordered to the Washington naval hospital.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U.S. Marine-Hospital Service, for the fourteen days ended March 23, 1899.

Surgeon John Godfrey, to proceed to Port Huron, Mich., for special temporary duty.

Surgeon F. W. Mead, granted leave of absence for ten days from April 1, 1899.

Surgeon C. E. Banks, detailed as inspector of unserviceable property in the purveying division at Washington, D. C.

P. A. Surgeon L. L. Williams, relieved from duty at Washington, D.C., and directed to assume charge of the immigration inspection service at New York City.

P. A. Surgeon J. O. Cobb, to proceed to Savannah, Ga., for special temporary duty.

P. A. Surgeon A. C. Smith, to proceed to Savannah, Ga., for special temporary duty.

P. A. Surgeon J. M. Eager, relieved from duty at Washington, D.C., and directed to proceed to Cleveland, Ohio, and assume temporary command of Service.

Asst.-Surgeon H. W. Wickes, granted leave of absence for two days from April 3, 1899.

Asst.-Surgeon Hill Hastings, order of March 13, 1899, to proceed to Cleveland, Ohio, revoked, and directed to proceed to Seattle, Wash., and assume command of Service.

Asst.-Surgeon S. B. Grubbs, detailed as quarantine officer for the port of Cienfuegos, Cuba.

Asst.-Surgeon R. H. von Ezdorf, to report to medical officer in command, South Atlantic quarantine station, for temporary duty.

Asst.-Surgeon W. R. McAdam, to report to medical officer in command, Tortugas quarantine, for temporary duty.

P. A. Surgeon L. L. Williams, to report to Surgeon C. E. Banks, chairman board of examiners, Washington, D. C., for examination to determine fitness for promotion to the grade of surgeon.

P. A. Surgeon W. P. McIntosh, to report to Surgeon C. E. Banks, chairman board of examiners, Washington, D. C., to determine fitness for promotion to the grade of surgeon.

P. A. Surgeon J. C. Perry, to assume temporary command of Service at Port Townsend, Wash., during absence of P. A. Surgeon C. H. Gardner.

P. A. Surgeon C. H. Gardner, to proceed to Seattle, Wash., and assume temporary command of Service, relieving Acting Asst.-Surgeon J. B. Eagleson; upon being relieved by a regular officer of the Service, to rejoin station at Port Townsend.

Asst.-Surgeon A. R. Thomas, to report to Surgeon G. W. Stoner, chairman board of examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of P. A. Surgeon.

Asst.-Surgeon H. W. Wickes, to report to Surgeon G. W. Stoner, chairman board of examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of P. A. Surgeon.

Asst.-Surgeon H. S. Cumming, to report to Surgeon G. W. Stoner, chairman board of examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of P. A. Surgeon. Relieved from duty at Washington, D. C., to take effect March 31, 1899, and directed to rejoin station at New York City.

Asst.-Surgeon Hill Hastings, relieved from duty at Washington, D.C., to take effect March 31, 1899, and directed to proceed to Cleveland, Ohio, and assume temporary command of Service.

Asst.-Surgeon L. D. Fricks, assigned to duty as sanitary inspector on U. S. Transport "Sedgewick."

Asst.-Surgeon T. F. Richardson, to report by letter to Surgeon J. H. White for duty at the immigration depot, New York City.

Asst.-Surgeon W. W. King, to report to medical officer in command, Detroit, Mich., for temporary duty and assignment to quarters.

Asst.-Surgeon F. J. Thornbury, to report to medical officer in command, Stapleton, Staten Island, N. Y., for duty and assignment to quarters.

Asst.-Surgeon Carl Remus, to report to medical officer in command, Cape Charles quarantine, for duty and assignment to quarters.

Acting Asst.-Surgeon S. B. Foster, granted leave of absence for twenty days from March 10, 1899.

Hospital Steward E. S. Maguire, upon being relieved by Hospital Steward C. H. Miller, to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters.

Hospital Steward Charles Miller, upon being relieved by Hospital Steward G. H. Brock, to report to medical officer in command, Detroit, Mich., for duty and assignment to quarters.

Hospital Steward W. Stearns, granted leave of absence for thirty days from April 12, 1899.

Hospital Steward W. W. Holb, upon being relieved by Hospital Steward P. H. Peck, to proceed to Norfolk, Va., and report to the medical officer in command for duty.

Hospital Steward F. H. Peck, upon being relieved by Hospital Steward C. G. Carlton, to proceed to Tortugas quarantine station, and report to the medical officer in command, for duty and assignment to quarters.

Hospital Steward C. G. Carlton, to proceed to Egmont Key Detention Camp, and report to the medical officer in command, for duty and assignment to quarters.

Hospital Steward J. E. Beck, to report to medical officer in command, New Orleans, La., for duty and assignment to quarters.

BOARD CONVENED.

Board convened to meet at the U. S. Marine Hospital, Stapleton, N. Y., Wednesday, April 5, 1899, for the examination of assistant-surgeons of the Service, to determine their fitness for promotion. Detail for the Board: Surgeon G. W. Stoner, chairman; P. A. Surgeon L. L. Williams and P. A. Surgeon W. P. McIntosh, recorder.

APPOINTMENTS.

Oliver Stewart of Michigan, appointed acting asst.-surgeon for duty at the port of Port Huron, Mich.

Julius E. Beck of Ohio, appointed junior hospital steward.